

BHAGAVAD GITA AND ENVIRONMENT

Wij
K.K.Dua



BHAGAVAD GITA AND ENVIRONMENT

The survival of the planet earth is threatened due to man's deleterious activities resulting into loss of biodiversity and smooth functioning of the ecological cycle. An action line is the need of the hour. The book enjoys the opportunity of looking into the various factors through Gita to analyse these factors and to provide possible solutions to mankind. An innovative attempt has been made through this book to discuss the verses of Gita With reference to environmental perspective. The verses of Gita have also been interpreted with respect to behaviour, ecology, evolution, genetics etc.

This book act as a guide for intellectuals, researchers and students of reasons who value science and religion as one . It is through the amalgamation of these two that can bring well-being to human race and make the smooth functioning of environmental cycle possible.

ISBN : 81-86049-03-7

Rs. 400.00

\$ 60.00

£ 35.00

294.592

Digitized by Arya Samaj Foundation Chennai and eGangotri

DVA - B पुस्तकालय

गुरुकुल कांगड़ी विश्वविद्यालय, हरिद्वार

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114440
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29 MAR 2003

1493/24

15 OCT 2004

13281



114440

Stock Verification-2024

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AND
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DR. K.K. DUA



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KOSHAL BOOK DEPOT
DELHI (INDIA)

Published by
Rishipal Sharma
Koshal Book Depot
3611/5 Narang Colony,
Tri Nagar Delhi-110035 (India)
Ph.: 7192770

Distributor :
Bharatiya Kala Prakashan
3611/5 Narang Colony
Tri Nagar, Delhi-110035
Ph.: 7192770

First Published : 1999

© Dr. K.K. Dua

ISBN : 81-86049-03-7

Price : Rs. 400.00

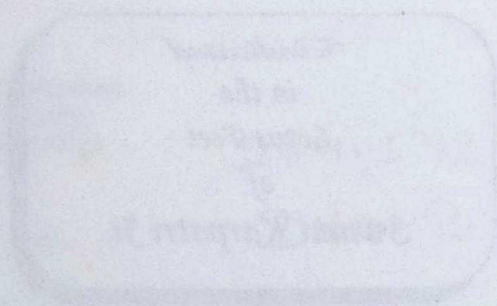
Laser Typesetting by
Ishan Comprint
G-16/14 (DLF) Qutab Enclave-I
Gurgaon, Haryana-122002
Ph. 91-352412

Printed by
Santosh Offset
40, Anand Nagar
Inder Lok, Delhi-110035

294.592

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*Dedicated
in the
Lotus Feet
of
Swami Karpatri Ji*



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FOREWORD

India sits at the centre of Asia, the centre of the world. Indian people have settled across the subcontinent in great diversity of land, seascapes and environment. The empires and territories of early rulers have faced invasions of the Moghuls and British and other colonizers. Through this they have gained and shared a variety of ethical world views.

Under the diversity of communities, and languages, there is the Gita. Young and old still follow the guidelines laid down by the ancestors and their wisdom. Another survivor of the human heritage is the environment and agriculture that has been sustained here for many millennia.

This pioneering book assembles the work of Dr. Kamal Kumar Dua in a modern presentation of application of Bhagavad Gita to basic questions we face in the human relationships with other attributes of the environment. How can we follow a good life ("eubios" as I call it)? The issues include Nature Conservation, Bio-diversity, Succession of Life and Evolution. How universal are these words and principles? What are the roles of genes? How can we face and overcome human selfishness which pervades all places of our planet, India not excluded?

In the scientific age, we have to re-examine the way we have lived in the environment. Industrialization has given many local challenges like pollution and global ones like ozone depletion. We need to develop bio-ethical principles, extending concepts we have received from the past and developing new ones. The debate is cross-cultural and international, and we have to include all views.

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synthesis and presents to all, Indian and others, one interpretation by a devout Hindu biologist, that takes us closer to universal solutions.

I congratulate Dr. Kamal Kumar Dua for this book and look forward to debate on these issues. May it stimulate many scholars, but above all save our environment by practical actions of our readers.

March 1998
Japan

Dr. Darryl R.J. Macer
Inst. of Biological Sciences
Univ. of Tsukuba Science City, Japan
(Member, UNESCO International Bio-ethics Committee)

PREFACE

First of all I must admit that without the Grace and Blessings of Lord Krishna, it is not possible for a mortal man to write even a single line about Bhagavadgita. The Bhagavadgita is a symposium of all the principles governing the ethical and spiritual life of man. The Lord's supreme motive is to make these teachings available to all aspirants. The life of man would rise to the stature to the extent these principles are imbibed and put into practice. However, the sacred science will serve no purpose to flippant people, therefore, it should not be told to them. Gita is like sun, its verses are its radiation. These radiations can be utilised by man for infinite purposes. The coded verses can be used by man at all times for infinite purposes. The message encourages a living being to follow the path of knowledge and action so as to attain perfection.

I received a copy of Bhagavadgita during my post graduate convocation. I read the verses but without any objective. I couldn't understand a single verse. However, as part of my religion I started reading Gita. The ritual continued for a couple of years. Thus it was without any purpose and enlightenment. However a sense of satisfaction was felt which also brought about spiritual strength. It was only a couple of years later that I read an article on religion and environmental conservation. A mutation of thought took place. Suddenly I realised that Indian culture has enormous intellectual wealth. It can bring peace and harmony in the world. It has also the answers for the global environmental problems facing the world today. Henceforth, I read Gita with this intention and frame of mind. Thoughts with His

Grace started flowing, resulting in the publication of numerous articles in national and international journals. The views were also presented at various national and international conferences. During this period encouragement also came from various quarters which includes Jagat Guru Shankaracharya of Puri and Dr. Karan Singh. Thus an unending chain has started and for its continuity I pray to the Lord for His Blessings.

15th July 1998
Agra

K.K.Dua

ACKNOWLEDGEMENTS

I am deeply indebted to Professor P.S. Satsangi, Director, Dayalbagh Educational Institute (Deemed University), Agra, for his constant encouragement, inspiration and inculcating an atmosphere conducive for inter-disciplinary research and learning in the Institute. This has stimulated me to pursue and realize the objectives of this book.

I would like to express my gratitude to Shri Satya Prakash Shastri, Patron, Satya Sanatan Dharma, Agra, for his valuable guidance and several illuminating views on religious aspects.

My sincere thanks to Dr. Arun K. Sinha, Dean, Faculty of Science, D.E.I., Dr. Ashok K. Sinha, Head, Dept. of Zoology, D.E.I., Dr. Anil K. Bhatnagar, Dept. of Botany, D.E.I., Dr. L.D. Khemani, Dept. of Chemistry and my other colleagues for their encouragement and support from time to time.

I am grateful to Dr. Sukhdev Roy, Dept. of Physics & Computer Science, D.E.I., for going through the manuscript and giving useful suggestions.

I would like to acknowledge UNESCO, WWF, WHO, IUCN, ICCE etc. for providing relevant literature which have been of extreme help in writing this book.

This work would not have been possible but for the strong support and patience of my parents, wife Anila and sons Abhishek and Anmol.

March 1998
Agra

Dr. K.K. Dua
(Vice President, All India Bio-Ethics
Association)

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INTRODUCTION

त्वमेव माता च पिता त्वमेव
त्वमेव वन्धुश्च सखा त्वमेव ।
त्वमेव विद्या द्रविणं त्वमेव
त्वमेव सर्वं मम देव देव ॥

Obeisance to Lord Krishna, Guide and Teacher of the world, Son of the world, Son of Vasudeva, Chastiser of Kamsa and Canura, and Devaki's supreme delight.

Srimad Bhagavadgita occupies a significant position among the scriptures available in the world. It contains the mystic and divine message having been emanated from the lips of Lord Krishna to Arjuna, the representative of a living being in general and to mankind in particular. Through Gita, the Lord has projected unique ideas which are inaccessible, unfathomable and infinite.

The Lord through shlokas/verses has narrated the divine message in Gita. A scripture is the basic desideratum for any religion as it provides guidance for the attainment of perfection in life. Further, a faith or religion devoid of gospel, gets lost in a series of transformations and finally disintegrates and loses its identity. The integration of scripture is a holy development and with authoritative statements narrated in an effective manner provide anchorage in the form of divine message for mankind at all times.

BHAGAVADGITA : ITS UNIVERSAL CHARACTER

The Bhagavadgita has a universal character. It is, no doubt, written originally in Sanskrit, however, with the

modern facilities, it is possible to translate the verses in any language. Today the book is available throughout the world spreading the divine message. There are innumerable religious books for the guidance of mankind but none provides the holistic view of life and nature as does the Bhagavadgita. Gita has a special place or universal value as it reveals the path of perfection and tells us the law that governs the life and functioning of the natural cycles. The path of perfection is the goal of life. The path and purpose of Gita is to evolve out of man a personality that is perfect from all points of view. It is relevant at all places and for all times.

The message of Bhagavadgita exhorts a living being in various ways. Some of these are as follows:

- (1) To be courageous
- (2) To work with a plan and purpose
- (3) It believes in intellect and inspires a man to apply himself to achieve a higher plane
- (4) Achievement of higher plane requires *Jñānayoga* and *Karmayoga*
- (5) It shows the path to achieve excellence
- (6) It demarcates between the divine and demonical persons
- (7) How to wage a righteous war against the wicked
- (8) It believes in harmonious development of all living beings leading to the smooth functioning of nature and its cycle
- (9) The mechanism of continuity of life
- (10) It preaches the motto of live and let live
- (11) The path for the attainment of stability and peace of mind

RELATIONSHIP BETWEEN GOD AND LIVING BEINGS

Bhagavadgita is a perfect guide for living beings at

whatever place, he or she may be present. Every student of Gita is a potential Arjuna. It is important to note that the relationship between Shri Krishna and Arjuna is eternal and divine. It is intimate like kith and kin. It can be represented in the form of the Lord and a living being. In the continuity of life, each individual at that phase, is represented in the form of Arjuna. It continues as the evolution progresses. The Lord is there to provide support and sustenance to a living being who is constantly engaged in self realization and has a progressive outlook. An individual may or may not know this fact. For this the Lord says:

न त्वेवाहं जातु न त्वं नेमे जनाधिपाः ।
न चैव न भाविष्यामः सर्वे वयमतः परम् ।२.१२ ।

*"Not I, nor you, nor any of these ruling princes
was ever non-existent before; nor is that we
shall cease to be in future". (BG II-12)*

Bodies appear and disappear, but life continues. An individual desires and makes untiring efforts to attain a higher plane. Evolution of species does not occur in one generation. It requires numerous generations, moreover, it should have a cosmic plan and purpose. It is only then that it attains the state of perfection. However, this too becomes transitory with the change in environment. Therefore, the Lord in each stage has demanded from a living being - to make attempt to achieve the higher plane. This act requires the path of *Jñānayoga* (Path of knowledge) and *Karmayoga* (Path of Action).

In Bhagavadgita, Lord has clearly stated that a living being cannot attain the desired result until it is self enlightened through the process of self-knowledge. The Bhagavadgita has a uniqueness and a sublimity of its own. The first chapter out of 18 chapters in Gita is merely the setting. There is no utterance of Lord Sri Krishna in the first

chapter. The Divine message in entirety is delivered in the second verse of the second chapter. The Lord states:

कुतस्त्वा कश्मलमिदं विषमे समुपस्थितम् ।
अनार्यजुष्टमस्वर्ग्यमकीर्तिकरमर्जुन ॥२.२॥

*"Whence in this perilous state comes upon these
dejection unworthy heaven excluding is dis-
graceful, O Arjuna."* (BG II-2)

As mentioned above, the teaching of Gita proper starts from here. It is the first time here that the Lord opens his lips-till this he has been hearing Arjuna - merely as a companion. Arjuna at the moment is in a state of dejection, despondency and in a state of uncertainty about the outcome of the war. Further, he finds his close relatives, teachers and elders in front of him with whom he has to fight. The Lord at this stage, suddenly assumes a new status i.e. of a 'Guru' or a 'teacher' and opens his lips to deliver the eternal and divine message which is relevant for all times and in all situations.

The Lord in this verse identifies the following factors:

- That Arjuna is in the midst of the battlefield.
- That Arjuna is in a perilous state as he finds himself in a critical situation in which a battle is to take place.
- That Arjuna is in a state of dejection.

BATTLEFIELD AS NATURE/ENVIRONMENT

Arjuna as the representative of a normal man has both virtue and vice, intermingled in a varying degree. To shed the lingering vice and to get well-drilled in the growing virtue is the purpose of life, thus Arjuna has been represented as a normal man. To a person of his type the message is bound to be fruitful. Any person endowed with normal human traits is

Introduction

competent both to study and to put into practice the teachings of Gita. Perilous state of an organism is due to the fact that as the organism faces a new situation other than normal at this moment the it is uncertain as to how to counter it. Further, whether to fight or not. Whatever, may be the altered environmental factors - a state of struggle is developed and a decision by the self is required to be taken.

Nature is a playground for a living organism. Life here is a delightful game. One ought to be a willing and gay participant in this play. One is expected to enter into ones game. To such a person this earth is a mansion of mirth. But who plays his part with reluctance or disgust, this earthly career is a painful burden. In nature, plants, animals and micro-organisms have to face the same situation, as being faced by Arjuna - as such an intra and interspecific struggle is always going on. In the event of altered abiotic or biotic factor a new situation develops. Those who face the situation are called nobles. No survival and evolution will take place in any species if it shuns away from the situation by virtue of being overtaken by infatuation.

The evolution and formation of a new species is the result of those plants and animals who have faced and won over the new environmental stress. The extinction and elimination is the result of those who could not cope up with the altered stress. The Lord's statement has a clear message of the "Law of Nature" The clue is, hereby, given to a life of triumph and conquest. The strong and virile alone are fit for a life of great consequence. Achievements both here and hereafter are born of competence and manly action. Strength nurtures life, weakness wears it away. Virtue and righteousness are the outcome of strength. Vice and wickedness have their original in weakness. As for the cowardice and crookedness; it is the feeble which resorts to foul play. Action borne in manliness leads to freedom, and its opposite to bondage.

The selfish acts of man have resulted in the loss of biodiversity. Its sustenance is only possible by waging a

righteous war. Any act of unmanliness may lead to bondage and further loss of natural resources. The strength to fight the evil is the Message of Gita. This is the core of the teachings of the Gita.

BHAGAVADGITA IN BATTLEFIELD

The Bhagavadgita among the scriptural trinity occupies a peculiar place. Like some of the other scriptures it did not emanate in the woods but in Kurukshetra, the war front was the place of its origin. A battlefield demands from a person to keep his mind and action in equilibrium, further, to face the situation in a positive way. Escapism or passivity has no place in the battlefield. Escapism means defeat and in nature, a weakling has no place. It is eliminated in due course of time.

An exciting setting was deliberately chosen by the Lord. The reason, as per the Lord, were numerous. He viewed this world as a huge playground. Life in this place is a delightful game. Further, one is required to be willing and gay participant in this game. One is expected to enter life and play his game in the sportsman spirit.

Another aspect of life is that in the battlefield that the nature is - an organism so as to exist has to indulge in a warfare. The war here is for the purpose of survival. For this it has to undertake a battle with biotic or abiotic factors. Nothing here on earth is achieved without a fight. He who has not learnt to wage a war of life is perished. Similarly, a species will be extinct which does not indulge to conquer the given situation.

The Bhagavadgita teaches one to equip oneself for the battle of life. The war requires proper preparation - without it any attempt will be futile. It is, therefore, the Lord has chosen Kurukshetra as a pulpit for delivering the divine message.

The Bhagavadgita proclaims that the panorama of nature is an interminable battlefield. Life is permeated by

plants, animals and micro-organisms in soil, air and water. All are equally important for the smooth functioning of nature. All forms of life contain organic matter. Moreover, life subsists on life. Life means to live out. New forms are built at the cost of old ones.

Creation, preservation and destruction are the three phases of ceaseless activity going on in nature. Destruction is involved in construction. In this unalterable scheme of nature, a weakling has no place. For the latter, it is the slaughter house, where unwanted ones are wiped out. Thus there is science and art in nature. Gita has recognised this hard fact and exhorts:

'Do thy job that is incumbent on you, as a religious act.'

All attempt to avoid destruction is futile. Further, a weakling has no place here or hereafter. In this great cosmic plan of action, play your part as a Hero. Fight the battle of life. Do not falter in your allotted duty. To a knowing one, duty such as warfare is as sacred as worship in a sanctuary.

Gita has also message for men, politicians, NGO's or persons for the protection of natural wealth. It also exhorts these men to wage a war against those who are wicked and are destroying nature. He alone is able to save the world who has learnt to slay the wicked in a spirit of worship. In unmistakable terms the Gita exhorts man to engage himself into the holy act. Virtue consists in wiping out the wicked.

BHAGAVADGITA AND ENVIRONMENT

Bhagavadgita is the ocean of nectar and knowledge. It is full of divine splendour and grandeur. The verses of Gita, depending upon the frame of mind provide scope to interpret it in one's own way. The frame of mind of an individual is normally dependent upon the environment, social, cultural, scientific position at a given time. Therefore, Gita provides a source to interpret according to need and solution one may desire to seek in. A review of the literature on Gita

indicates that numerous commentaries are available with different interpretations. However, all have their own way to seek knowledge. A simple example to explain this statement is as follows:

The sunrise has a beauty and charm of its own and can be extolled differently by Astronomy, Astrology, Medical Science, Natural Science, Mathematics, Meteorology, Biology etc. It provides vision from different angles. The sun is the source of inspiration to all. Similarly Bhagavadgita allows itself to be commented on, in different ways. It gives inspiration to innumerable cults and creeds, moreover, at the same time it is supremely above all of them.

The present book is a humble attempt to view Bhagavadgita in the present time when indiscriminate human activities have led to pollute the environment in various ways. The environment includes abiotic and biotic factors and nature functions with a plan and purpose. Further, it is observed that the evolution and extinction of living beings has been taking place. However, man's role in the present time has led to hamper the natural function threatening the ecological cycle. There has been unnecessary loss of flora and fauna, which are essential constituents of the ecosystem.

The present form is a collection of articles written from time to time. Through the verses of Gita an attempt has been made to bring awareness of environment and educate the masses about the righteous path to be adopted and practiced by man.

SUSTENANCE OF BIO-DIVERSITY : AN ACTION LINE THROUGH BHAGAVADGITA

Life exists on earth as plants, animals and micro-organisms. Further, their sizes vary from microscopic to giant forms. An example of the former is amoeba, bacteria while that of the latter is elephant and giraffe etc. No doubt, their forms and physiology may be different but their very survival and actions are linked with each other directly or indirectly, actively or passively.

Lord Sri Krishna in the Bhagavadgita states to Arjuna (the representative of mankind) that so long as a living being carries his body, he is bound to perform actions in one form or another, according to his nature. The activities include locomotion, rest, feeding, thought and other vital sensory functions.

न हि कश्चितक्षणमपि जातु तिष्ठत्यकर्मकृत् ।
कार्यते ह्यवशः कर्म सर्वः प्रकृतिजैर्गुणैः ॥३.५॥

"Surely none can ever remain inactive even for a moment; for everyone is helplessly driven to action by nature-born qualities." (BG III.5)

These activities are performed under the impulse of one's nature, which are formed under the latencies of one's deed and as carried out by their ancestors. For example, a dog will give rise to a dog and it will perform activities accordingly. This is what is meant by being helplessly driven to action by one's nature born qualities. Therefore, plants, animals and microbes are all involved in their natural activities.

THE ECOLOGICAL CYCLE

Further, in an ecological cycle, they occupy a definite and irreplaceable position. Plants are the primary producers in an ecosystem. They use the energy from sunlight to combine carbon-dioxide and water to form energy stores mainly in the form of carbohydrates. Plants take minerals from the soil. It is important to note that plants form the basic food for all animals. The herbivores like deer, goat, cow, rabbit etc., take plants as food. Further, the carnivores like lion and tiger feed on these animals. All these plants and animals on death are decomposed by the micro-organisms which include the bacteria and fungi, form manure or raw material/natural pool for the other surviving plants. Therefore, in an ecosystem it is observed that all forms are interdependent like a chain.

अव्यक्तादीनि भूतानि व्यक्तमध्यानि भारत ।

अव्यक्तनिधनान्येव तत्र का परिदेवना ॥२.२८ ॥

"Beings are in a state of un-manifestation before birth and at death they return to the un-manifestation again. They are in manifestation state only in the interim period between birth and death".

BG II.28)

The idea is that in a living being from birth to death, the body is in manifest form i.e. a man's child will look like a man and a monkey's like a monkey. However, after death they are disintegrated in the same carbon, nitrogen, iron etc. Environment plays a very important role in the transition of a being from un-manifestation to manifestation stage.

EVOLUTION AND EXTINCTION OF BIO-DIVERSITY

Evolution and extinction have always been taking place in nature. New forms are evolved at the expense of weak forms.

नासतो विद्यते भावो नाभावो विद्यते सतः ।
उभयोरपि दृष्टोऽन्तस्त्वनयोस्तत्त्वदर्शिभिः ॥२.१६ ॥

"The unreal has no existence: the real never ceases to be the truth about both has been realized by seers."
(BG II.16)

As per the law of evolution, beings are always seeking to adapt themselves in relation to the changing environment and other related factors. This is only possible if their understanding of nature and its forces is correct. Further, their adjustment with environment is also perfect. Life is a series of experiments to get at the permanent as there is constant change in the environmental cycle, which may be slow, resulting into the formation of a new condition. Therefore, whatever form an individual may have, with the change of environment, modification with respect to the altered environment is required for their survival.

Fossil records show that the rate of evolution has always been greater than the rate of extinction resulting into the formation of millions of varied related and unrelated species.

IMPORTANCE OF BIO-DIVERSITY

The importance of Bio-Diversity for human beings cannot be under-estimated. The various medicines, foods, energy sources and industrial products used by man have come virtually from every ecosystem and every corner of the earth.

Bio-diversity is at the centre of all the natural systems that support life on Earth: purifying the waters; recycling oxygen, carbon and other elements; maintaining soil fertility; providing food and medicine and safeguarding genetic richness for improved crops and livestock. Diversity is the basis for evolution, adaptation and change; and reason itself relies in part upon our ability to make distinctions and draw comparisons from the variety of the natural world.

Development without regard to biodiversity (and the soil, rivers and seas which sustain it) has eroded the quality

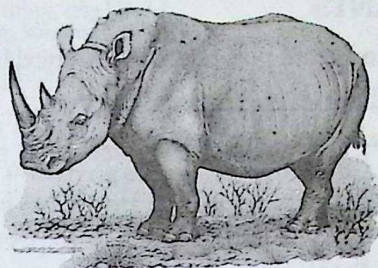
of our lives. In the North, the main challenge is to moderate excessive consumption. For the larger populations of the South, the task is more tangibly difficult, as many communities deplete their environment for the sake of survival. Acquiring knowledge of natural assets and developing non-destructive means for utilizing them can greatly reduce the harm, and can help pave the way for policies and education that lead to a conservation ethic.

Man has used plants and animals as medicines from the earliest times. Even today the tribals in different parts of the world, who are cut off from the man designated modern world use plants and animals as medicine. The World Health Organization (WHO) estimates 80% of the people in the developing countries rely in traditional medicine. In South East Asia 6,500, China 5000 and India 2,500, plant species are used as medicine. In India, Ayurveda, the science of medicine based on plants is in practice successfully from thousands of years and it is claimed that this system of therapy has some answers to the diseases, which the western medicine do not have. Animals and plants have contributed as medicine to man for his well-being in a big way.

Didemnin, a chemical, derived from sea squirts, is active against a broad range of viruses ranging from colds and influenza to herpes and meningitis. Shark liver contains lipids that enhance human resistance to cancer. Blister beetle provides cantharidin, which is used to treat urinogenital disorders. Apart from these, certain animals are used as models for research programmes of which till date there are no or every little alternative, for example Armadillo is studied for the production of anti-leprosy vaccines. Some species of snail and American bison are used for studying the defense mechanisms in cancer, as they do not contract cancer.

Approximately 119 pure chemical substances extracted from higher plants are used as medicines throughout the world. Over 40% of all United States prescriptions depend upon natural sources. Some of these drugs are classics, which have fundamental use in modern medicines. Quinine an alkaloid, from the bark of Cinchona tree, even today has an

Sustenance of Bio-diversity: an Action Line through Bhagavadgita 13



All five of the world's rhinoceros species are endangered by poaching for their horn

effective answer to malaria, isolated in 1820 Caffeine (Tea) acts as a nervous system stimulant and Morphine (opium poppy) as an analgesic.

In fact only 500 species of higher plants worldwide have been thoroughly studied for their potential as a sources of new drugs and the majority of them are found in temperate zone, leaving the tropical forest scarcely explored. Regrettably, these reserves are rapidly being lost forever with their forest habitats.

MAJOR DRUGS DERIVED FROM PLANTS

Drug	Source		Use
Atropine	<i>Atropa belladonna</i>	(Belladonna)	Anticholinergic
Caffeine	<i>Camellia sinensis</i>	(Tea)	CNS stimulant
Camphor	<i>Cinnamomum camphora</i>	(Camphor tree)	Rubefacient
Cocaine	<i>Erythroxylum coca</i>	(Coca)	Local anaesthetic
Codeine	<i>Papaver somniferum</i>	(Opium poppy)	Analgesic
Colchicine	<i>Colchicum autumnale</i>	(Autumn crocus)	Antitumour agent
Digitoxin	<i>Digitalis purpurea</i>	(Common Foxglove)	Cardiotonic
L-Dopa	<i>Mucuna deeringiana</i>	(Velvet bean)	Antiparkinsonian
Menthol	<i>Mentha sps</i>	(Mint etc.)	Rubefacient
Morphine	<i>Papaver somniferum</i>	(Opium poppy)	Analgesic
Quinine	<i>Cinchona ledgeriana</i>	(Yellow cinchona)	Antimalarial; antipyretic
Reserpine	<i>Rauvolfia serpentina</i>	(Indian snakeroot)	Antihypertensive
Scopolamine	<i>Datura metel</i>	(Recreed thom apple)	Sedative
Strychnine	<i>Strychnos nux-vomica</i>	(Nux vomica)	CNS stimulant
Thymol	<i>Thymus vulgaris</i>	(Common thyme)	Antifungal

THREATENED PLANTS

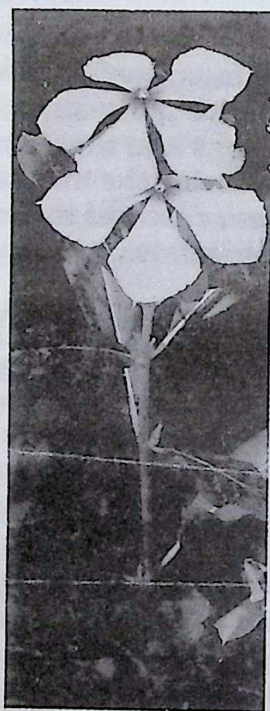
Numerous important medicinal plants are threatened by habitat destruction or over-exploitation:

Plant		Use
Wild ginseng	<i>Panax ginseng</i>	Tonic
Herba	<i>Ephedra sinica</i>	CNS stimulant
Licorice root	<i>Glycyrrhiza uradensis</i>	Expectorant, antiallergic
Coptis root	<i>Coptis chinensis</i>	Antimicrobial
Sichuan fritillary bulb	<i>Fritillaria cirrhosa</i>	Antitussive
Dendrobium	<i>Dendrobium loddigesii</i>	Tonic, antifebrile, stomach

Agriculture production has increased along with the scientific development by man. He has been able to develop new strains of high yielding crops for feeding the mankind. The new strain, unfortunately, has been observed to provide good results by way of disease resistance and increase in output for a limited period, as observed in wheat, rice, soyabean, coffee etc. After which more new strains are required and this is only possible through wild genes\species.

The contribution of biological diversity to industry cannot be ignored. Forests that stored solar energy millions of years ago provide us oil, coal and natural gas for industry. Natural fats and oil contribute as for the chemical manufacturing of cosmetics, adhesives, preservation, foods, beverages, lubricants, polishes and whole variety of medicines.

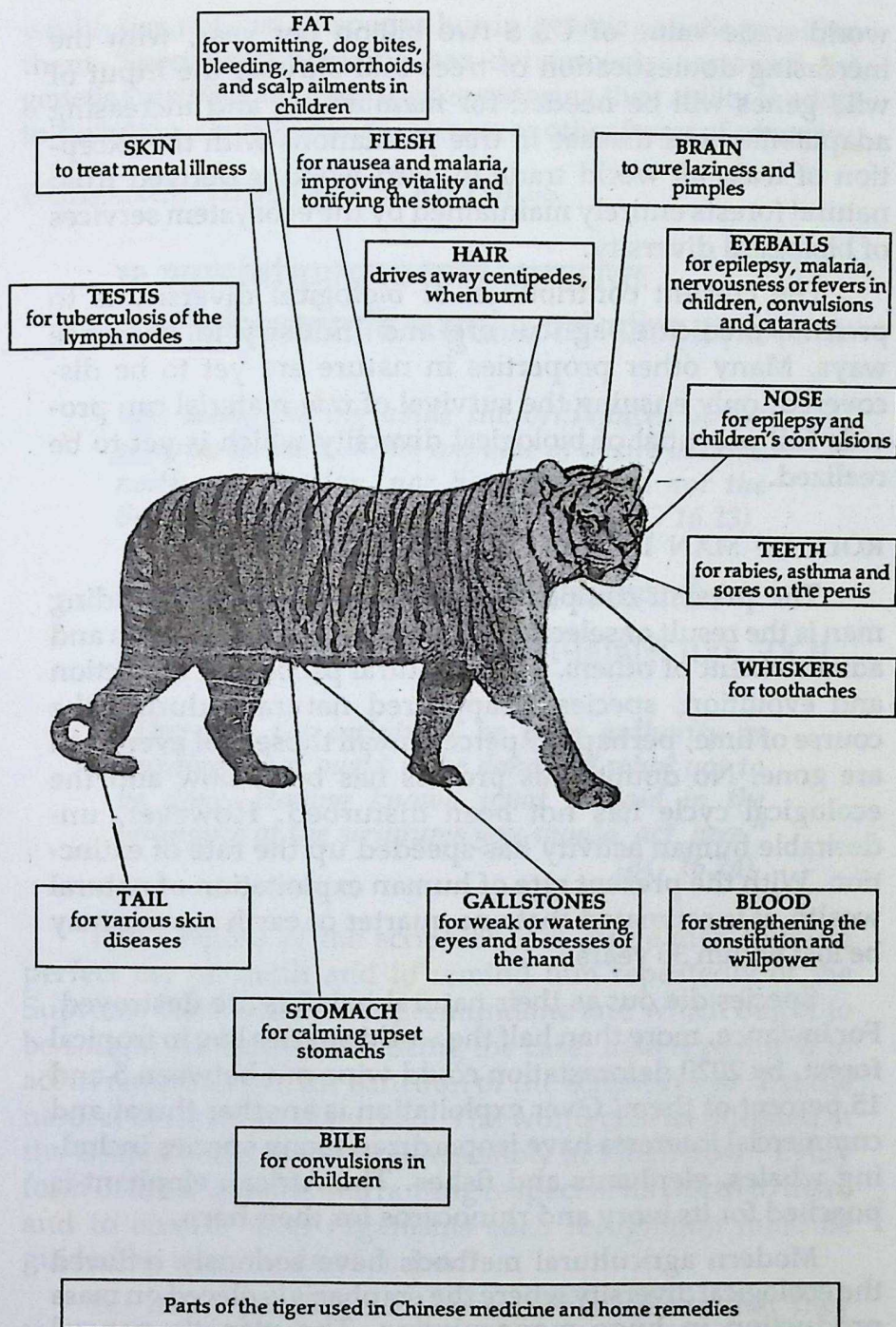
Timber is the biggest wild contribution to Industry with a



The rosy periwinkle yields drugs which have increased the success rate to 4 in 5 for treatment of childhood leukemia

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world trade value of US \$ two billion per year, with the increasing domestication of trees and shrubs, the input of wild genes will be needed for maintaining and increasing adaptability and disease in tree plantations with the exception of teak, all world trade in hard wood is derived from natural forests entirely maintained by the ecosystem services of biological diversity.

The current contribution of biological diversity is to provide medicine, agriculture and industry in immense ways. Many other properties in nature are yet to be discovered, only ensuing the survival of raw material can provide full potential of biological diversity which is yet to be realized.

ROLE OF MAN IN NATURE CONSERVATION

The present composition of natural wealth including man is the result of selective elimination of some species and advancement of others. In the natural process of extinction and evolution, species disappeared naturally during the course of time, perhaps 99 percent of all those that ever lived are gone. No doubt, this process has been slow and the ecological cycle has not been disturbed. However, undesirable human activity has speeded up the rate of extinction. With the present rate of human exploitation of natural wealth, it is estimated that one quarter of earth species may be lost within 30 years.

Species die out as their natural habitats are destroyed. For instance, more than half the world species live in tropical forest, by 2020 deforestation could wipe out between 5 and 15 percent of them. Over exploitation is another threat and commercial interests have jeopardized many species including whales, elephants and fishes. The African elephant is poached for its ivory and rhinoceros for their horn.

Modern agricultural methods have seriously reduced the ecological diversity where the emphasis is placed on mass production in huge monocultures. The planet's natural

wealth lies not just in species but in genetic variations within them. Specialized breeding has dangerously narrowed the genetic variability of many species restoring their ability to adapt to pollution, climate change diseases or other forms of adversity.

GUIDANCE THROUGH SCRIPTURES

यः शास्त्रविधिमुत्सृज्य वर्तते कामकारतः ।
न स सिद्धिमवाप्नोति न सुखं न परां गतिम् ॥१६.२३॥

"He who, casting aside the ordinances of the scriptures, acts on the impulse of desire attains neither perfection, nor happiness and nor the Supreme goal."
(BG 16.23)

तस्माच्छास्त्रं प्रमाणं ते कार्याकार्यव्यवस्थितौ ।
ज्ञात्वा शास्त्रविधानोक्तं कर्म कर्तुमिहार्हसि ॥१६.२४॥

"Therefore the scriptures be your authority in deciding what ought to be done and what not to be done. Having known what is said in the ordinance of the scriptures you should act here."
(BG 16.24)

The purpose of the scripture is to guide man to live a perfect life on earth and to remind him repeatedly of the Supreme Goal which is supermundane and which ought to be sought earnestly. This being the case, man is required to act in nature as per the sanction of the scriptures so that the natural cycle is not disturbed. The world charter adopted at the United Nations General Assembly in 1982 states: "Every form of life is unique, warranting respect of its worth to man, and to accord other organisms such recognition must be guided by moral code of action."

Yet many people and governments believe that they have a right to consume more, without concern for the con-

sequences. This explosive attitude towards nature is leading to species extinction, threatening levels of pollution, depletion of stocks of land and wildlife, and overall impoverishment of many people's lives. Global per capita production of all the basic renewable resource system like forests, fisheries, croplands and grasslands, has begun to decline after reaching peaks in 1960's and 1970's because selfish activities are limiting the production of the planet.

THE ENEMY OF NATURE - THE DEMONICAL

Lord Sri Krishna has analysed the reason for the deterioration of the natural wealth, the persons involved and the reason for their unethical thinking.

प्रवृत्तिं च निवृत्तिं च जना न विदुरासुराः ।
न शौचं नापि चाचारो न सत्यं तेषु विद्यते ॥१६.७॥

"Men possessing a demoniac disposition know not what to do and what to refrain from; neither purity, nor right conduct nor truth is found in them".
(BG XVI.7)

The acts which are directed towards the general welfare of man are commendable. They are designated as ethical acts and worth performing and such action as is attended with evil consequences is worth eschewing and one should abstain from it. Men possessing demoniac disposition never realize that they should undertake only such actions as are worth performing and should abstain from those which are worth avoiding; hence it is observed that these people are guided in their activities by their own whims or caprices. Their entire actions and personality appears to be polluted.

असत्यमप्रतिष्ठं ते जगदाहुरनीश्वरम् ।
अपरस्परसंभूतं किमन्यत्कामहैतुकम् ॥१६.८॥

"Men possessing a demonic disposition say this world is without any foundation, absolutely unreal and Godless, brought forth by mutual union of the male and female, hence conceived in lust; what else?"
(BG XVI.8)

They believe that this universe, consisting of animate and inanimate creation, has no basis in the shape of God or there is any moral law. They have a feeling that no living being has any existence prior to its birth nor does a creature have any life after death, nor there is any creator or controller like God. These men have no other objective to fulfil in life except the gratification of carnal desires.

चिन्तामपरिमेयां च प्रलयान्तामुपाश्रिताः ।
कामोपभोगपरमा एतावदिति निश्चिताः ॥१६.११॥

"Giving themselves up to innumerable cares ending only with death. They remain devoted to the enjoyment of sensuous pleasures and are positive in their belief that this is the highest limit of joy".
(BG XVI.11)

"These men of atheistic persuasion deny the existence of God. They are body-centered or materialists. Hence, their nature gets debased, they never feel inclined to perform any virtuous deed. All their resolves are made with the aim for sensuous enjoyment. Their mind is ever busy hatching evil designs against others. In this way they harm themselves too. They habitually use their mind, speech and body in the gruesome deeds that tend to inanimate and exterminate the animate and inanimate creations.

Further, whatever their intellect, mind or body may be, it is solely intended to torment or obliterate the entire creation, thereby, effecting the smooth functioning of the ecosystem. The accumulation of wealth and enjoyment of

luxuries of various kinds is the sole aim of their existence.

आशापाशशतैर्बद्धाः कामक्रोधपरायणाः ।

ईहन्ते कामभोगार्थमन्यायेनार्थसंचयान् ॥१६.१२ ॥

"Held in bondage by hundreds of expectations and wholly giving themselves up to lust and anger they strive to amass by unfair means hoards of money and other objects for the enjoyment of sensuous pleasures. (BG XVI.12)

इदमद्य मया लब्धमिमं प्राप्स्ये मनोरथम् ।

इदमस्तीदमपि मे भविष्यति पुनर्धनम् ॥१६.१३ ॥

"They say to themselves that this much has been secured by me today and now, I shall realize this ambition, so much of wealth is already with me and yet again this shall be mine." (BG XVI.13)

अहंकारं बलं दर्पं कामं क्रोधं च संश्रिताः ।

मामात्मपरदेहेषु प्रद्विषन्तोऽभ्यसूयकाः ॥१६.१८ ॥

"Given over to egotism, brute force, arrogance, lust, and anger etc., and calumniating others, they hate Me (inner controller of all) dwelling in their own bodies as well as in those of others." (BG XVI.18)

Those men possessing a demoniac disposition proclaim themselves as the Lord of all, they enjoy all luxuries, accomplished in every way, mighty and happy. Nothing is rational in their thinking. Resorting to brute force they antagonize others. Giving over to lust, they indulge in immoral acts of various kinds and obsessed by anger they threaten to kill whoever acts in opposition to their will or dares to offend them.

THE RIGHTEOUS WAR : THE ANSWER

Lord Sri Krishna states that a righteous war is required against these demoniac people i.e. in the present context against those persons who are involved in poaching, deforestation, ozone depletion, polluting the environment and other such acts which have led to the present state of the planet.

स्वधर्ममपि चावेक्ष्य न विकम्पितुमर्हसि ।
धर्म्याद्धि युद्धाच्छ्रेयोऽन्यत्क्षत्रियस्य ।।२.३१।।

"Besides considering your own duty too, you should not waver; for there is nothing more welcome for a man of a warrior class than a righteous war".
(BG II.31)

The Lord explains that each member of a society has a duty to perform towards nature's well being and to protect to his fullest ability and He has termed these persons as men of warrior class. A war against the demoniac persons responsible for the present state of earth is required to be launched, not from any wicked motive or greed, in which no injustice is perpetrated, but which is conducted in conformity with the laws of morality and which devolves on one as a matter of duty, and has been waged for upholding equity and justice; there is no better religion than this in which there is participation in such a righteous war for a righteous means.

अथ चेत्त्वमिमं धर्म्यं संग्रामं न करिष्यसि ॥

ततः स्वधर्मं कीर्तिं च हित्वा पापमवाप्स्यसि ॥२.३३॥

"Now if you refuse to fight this righteous war, then shirking your duty and losing your reputation, you will incur sin". (BG II.33)

The Lord here proceeds to state that if he (man)

withdrew from the fight he would be guilty of falling from his allotted duty and the leaders, politicians, environmentalists and other persons who have acquired world fame by their righteous acts would be utterly destroyed and lost. Over and above that the neglect in performance of an obligatory duty would make them guilty.

अकीर्तिं चापि भूतानि कथयिष्यन्ति तेऽव्ययाम् ।
संभावितस्य चाकीर्तिर्मरणादतिरिच्यते ॥२.३४॥

"Nay people will also pour undying infamy on you; and infamy brought on a man enjoying popular esteem is worse than death." (BG II.34)

The Lord seeks to show Arjuna that for a man enjoying wide fame, as well as esteem of the people, loss of credit and honour is more painful than death.

अवाच्यवादांश्च बहून्वदिष्यन्ति तवाहिताः ।
निन्दन्तस्तव सामर्थ्यं ततो दुःखतरं नु किम् ॥२.३६॥

"Your enemies, disparaging your might, will speak many unbecoming words; what can be more distressing than this." (BG II.36)

The Lord points out if these esteemed persons fail to perform their obligatory duty by fighting the enemies of the congenial ecological cycle will come to conclusion that some lack of fear and courage has desisted Arjuna/man to take the righteous path. Therefore, a strong line of action is required to be taken.

ACTION LINE

नेहाभिक्रमनाशोऽस्ति प्रत्यवायो न विद्यते ।
स्वल्पमप्यस्य धर्मस्य त्रायते महतो भयात् ॥२.४०॥

"A path of action is required to restore the loss already done in the nature. In the path of action, there should be no loss of effort nor should there be fear for contrary result. Even little effort or practice of discipline will be an act towards right direction".
(BG II.40)

In this act, the intellect has to be determinate and directed singly towards one ideal i.e. saving the planet. The Lord states that for any act there are two courses; *Jyñānayoga* or the path of knowledge and *Karmayoga* or the Path of Action.

For the survival of the planet and the sustenance of the biodiversity, the action line demands these two factors. In the path of knowledge one has to determine the factors responsible for the loss of biodiversity and about those plants and animals which are facing extinction. In the Path of Action, the practical aspects are required to be taken into consideration and to evolve and implement such methods for the restoration of the threatened plant and animal species. In the Path of Action there should be no loss of effort nor there should be any fear of contrary results. Even a little practice or efforts of this discipline will be acts towards the right direction.

Many international agencies including the Convention of International Trade in Endangered Species of Wild of Fauna and Flora (CITES), United Nations Environmental Programme (UNEP), Worldwide Fund (WWF), Non-Governmental Organizations (NGO's) in different countries, and many other Governmental agencies of respective countries are working in this direction to find out the reasons for the depletion of biodiversity (*Jyñānayoga*) and the mode of protecting this loss (*Karmayoga*). The factors responsible for the vanishing species include the destruction of the natural habitats and use of trade of plants and animals. It has been reported by CITES that smuggling of endangered species is one of the largest problem being faced by the customs department.

The CITES and other international organisations conducted intense surveys and listed species that are threatened or potentially threatened by the international trade, for example in Appendix I, those species are included that are threatened with extinction and they are, or may be, affected by trade. For example, all lemurs and apes, giant panda, many South American monkeys, great whales, cheetah, leopard, the Asian elephants, rhinoceros etc. In the Appendix II the animals which might become endangered if trade were not controlled or monitored. Regulated trade is permitted by issuing proper licenses. This helps in monitoring and analysing the wildlife trade. This appendix contains 259 named taxa but many ten of thousands of species including all cacti and orchids, primates, cats, otters, whales dolphins birds of prey, tortoises and crocodiles. Appendix III contains species for which trade is regulated within the country. All this acts as an effective tool to monitor the trade of plants and animals. This act can be termed as an act of *Jyñānayoga*. To stop the illegal trade the role of customs and police is very important in combating the criminal activities and fraud. They have to fight the righteous war against the criminals.

The population of the threatened flora and fauna have been increased by the help of breeding programmes. The successful breeding of turtles and crocodiles are the burning examples.

In collaboration with UNESCO's Man and Biosphere Programme, a network of 286 biosphere reserves in 72 countries and a network of six regional microbial gene banks and training centres have been set up.

All these acts, no doubt, are commendable but in this million of dollars are spent including constant involvement of men and material. All this for the simple reason that it is due to man's environmental deleterious activities that has threatened the smooth functioning of the natural cycle.

The establishment of natural reserves, gene banks, breeding programmes and other activities as part of path of

Sustenance of Bio-diversity: an Action Line through Bhagavadgita 25

knowledge and path of action are commendable in which the seeds of various flora are stored. Man, perhaps, forgot that nature itself is a 'Great Womb'. The seed of all life forms are stored and germinate in it and the expression of the genetic material takes place here.

तेजः क्षमा धृतिः शौचमद्रोहो नातिमानिता ।

भवन्ति संपदं दैवीमभिजातस्य भारत ॥१६.३॥

"Sublimity, forgiveness, fortitude, external purity, absence of malice, absence of the feeling of self-importance : these are the marks of one who is naturally endowed with divine virtues, O descendent of Bharat."
(BG XVI.3)

CONCLUSION

Therefore, for the sustenance of the bio-diversity and smooth functioning of the natural cycle the role of environmental education at the grassroot level is very important. Through this the demoniac can be transformed into a divine person. The divine natured man believes in well-being of living beings of nature. Further, they are of the opinion that all levels are the manifestations of one Cosmic Life. In this the man, thereby, recognizes the sacredness in them and does not choose to hurt animals for sport, illegal trade or any other form of lust. This requires sincere effort at the global level by the government, people and individual. As for the result the Lord says:

कर्मण्येवाधिकारस्ते मा फलेषु कदाचन ।

मा कर्मफलहेतुर्भूर्मा ते सङ्गोऽस्त्वकर्मणि ॥२.४७॥

"Your right is to work only, but never to the fruit thereof. Be not instrument in making your action bear fruit, nor let your attachment to be inaction."
(BG II.47)

Man has the right to work in the right direction without caring about the fruit. As for the fruit is concerned, it is the business of the Lord.

How rare is 'rare'?

Wild species are often talked about, especially in relation to their conservation priority, as 'rare', 'threatened' or 'endangered'. Species identified as threatened by the World Conservation Union (IUCN) are assigned a category indicating the degree of threat they are believed to be facing. Animals and plants may be re-categorised over time — some will get rarer, while others may recover and become less threatened.

Extinct

Species not definitely located in the wild life during the past 50 years and therefore believed to no longer exist.

Endangered

Species in danger of extinction and whose survival is unlikely if the pressures or problems (e.g. hunting, habitat loss) they face continue. Also included are species that may be extinct but which have definitely been seen at some time over the last 50 years.

Vulnerable

Species believed likely to become 'endangered' in the near future if the pressures or problems they face continue.

Rare

Species with small world populations which are not currently classified as 'endangered' or 'vulnerable', but are at risk. Rare species are often restricted to a relatively small geographical area or thinly scattered over a much larger area.

Indeterminate

A species known to be 'endangered', 'vulnerable' or 'rare' but where there is not enough information available to place the species in the most appropriate category.

Threatened

IUCN uses the term 'threatened' to describe species in any of the above categories, or suspected of being so, but when insufficient information is available to confirm their current status. These IUCN categories refer to total world populations and distribution. However, you will also see or bear a species referred to as 'locally rare' or 'extinct' or 'nationally endangered' to describe its status in a particular part of its overall range.

BHAGAVADGITA ON EARTH SUMMIT

Ever since the creation of nature, there has been a growing tendency to interfere, in self interest, obviously a manifestation of the 'devilish' nature of mankind-, with its (nature's) natural functioning, posing a serious problem of ecological imbalance. This has led the altruistically inspired people, all over the world, to voice their concern about the matter and to get to do or get done such things as may help in getting rid of the impending disastrous consequences. This resulted in holding a conference known as 'Earth Summit' at Rio de Janeiro, Brazil from 3 - 14 June, 1992. It was the largest ever gathering of world leaders in which 172 Governments agreed to act to ensure the sustainable development of the planet. The conference required the preparation of an extensive period of two years. The reason for holding the summit was that the world leaders knew that a point of no return has been reached and the time has come to act not theoretically but practically as this might be the last chance for humanity to save the planet from the environmental destruction. Against this measure some felt that the summit was a positive step while others found the result disappointing.

Hereunder the Rio Conference has been discussed through Bhagavadgita while considering the text of the report on "Earth Summit concludes Historic Meeting" UNEP NEWSLETTER (ASIA PACIFIC), Vol. 9 : 3, 1-5, 1992.

A WAY OF LIFE

Bhagavadgita is one of the greatest scripture of Hindus which set forth a way of life and view of reality, acceptable to all of us, who are the students of reason and science. It is neither old nor new, it is eternal. It is the version of perennial eternal law. It discusses to us the glory of the gospel of the Gita delivered by

Lord Sri Krishna to Arjuna, a close companion, the representative of man and chosen instrument of the Lord. It articulates supreme knowledge for the benefit of the human beings. It lays upon the need for the co-ordination between theory and practice. The verses of Bhagavad Gita discuss various factors which led in holding of Earth summit.



The Survival of Plant Earth

TOWARDS A SUSTAINABLE WORLD-Agenda 21

One of the most influential and far-reaching outcomes of the United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil, in 1992 was the adoption of Agenda 21 - a programme of action for sustainable development worldwide.

While Agenda 21 lacks the force of international law, its adoption by more than 178 Governments carries with it a strong moral obligation to ensure its implementation. Agenda 21 stands as a comprehensive framework for action to be taken

globally - from now into the 21st century - by governments, United Nations organisations, development agencies, non-governmental organisations and independent groups, in every area in which human activities exhibit their impact on the environment.

The programme areas that make up Agenda 21 are described in terms of the basis for action, objectives, activities and means of implementation. The section covers :

- **Social and Economical Dimensions**, including combating poverty, population issues, sustainable human settlement development and health.
- **The Conservation and Management of Resources for Development**, including protection of the atmosphere, the planning and management of land resources, combating deforestation, the management of fragile ecosystems, the promotion of sustainable agriculture and rural development, conservation of biological diversity and protection of the oceans.
- **Strengthening the Role of Major Groups**, including global action for women towards sustainable and equitable development, children and youth in sustainable development, strengthening the role of indigenous people, workers and trade unions, business and industry, and farmers.
- **Means of Implementation**, including financial resources and mechanisms, technology transfer and capacity building, international co-operation and law.

Underlying Agenda 21 and other Earth Summit agreements is the idea that humanity has reached a turning point. We can continue with present policies which are deepening economic divisions within and between countries; policies which increase poverty, hunger, sickness and illiteracy and cause the continuing deterioration of the ecosystems on which life on earth depends.

Or we can change the course. We can act to improve the

living standards of those who are in need. We can better manage and protect the ecosystem and bring about a more prosperous future for us all. No nation can achieve this on its own. Together we can - in a global partnership for sustainable development. Agenda 21 is our guide.

The main reason the summit was held in which 172 Governments agreed to act to ensure the sustainable development of the planet is due to the fact that the earth, perhaps, is the only planet where life exists. Further, it is observed that its ecological cycle and the biodiversity is threatened due to high level of pollution. The loss of forests have resulted in the decimation of flora and fauna. All these are due to human's inhuman activity.

Lord Krishna tells Arjuna,

स्वधर्ममपि चावेक्ष्य न विकम्पितुमर्हसि ।
धर्म्याद्धि युद्धाच्छ्रेयोऽन्यत्क्षत्रियस्य न विद्यते ॥२.३१॥

"It is your duty not to waver, for there is nothing more welcome for a man of the warrior class than a righteous war". (BG II.31)

The war (for the preservation of earth's natural resources) has to be launched not from any wicked motive or out of greed, in which no injustice is perpetrated, but which is conducted in conformity with the laws of morality and which devolves on one as a matter of duty. There is no better religion to be a warrior for a righteous war by a righteous means. This act can very easily attain liberation (from the present polluted state of nature responsible for depletion of ozone layer and green house effect). The present generation leaders have got an opportunity to engage themselves in a purposeful war and they should not shirk away from it.

अथ चेत्त्वमिमं धर्म्यं संग्रामं न करिष्यसि ।
ततः स्वधर्मं कीर्तिं च हित्वा पापमवाप्स्यसि ॥२.३३॥

"If you withdraw from this fight, you will incur sin or would be guilty of falling from this allotted duty. Moreover, neglect in performance of an obligatory duty is wholly unjustified and inopportune" (BG II.33)

अकीर्तिं चापि भूतानि कथयिष्यन्ति तेऽव्ययाम् ।
संभावितस्य चाकीर्तिर्मरणादतिरिच्यते ॥२.३४॥

"People will pour unending infamy on you" (BG II.34). The world leaders gathered at the summit enjoy wide fame, love and esteem of the people. Their withdrawal from the duty will result into the loss of their credibility and honour in the eyes of the people who expect that their chosen representatives will take up the challenge.

CONCERN ABOUT ENVIRONMENT

Sri Krishna makes it abundantly clear by these arguments that desisting from the battle would prove to be the greatest source of misery and would incur sin. Moreover, those responsible will naturally give an impression that some lack of fear, courage or foresight may be the reason from desisting for taking such actions.

The conference included speeches, negotiations from more than 200 member states and all of them voiced concern on the present state of environment and steps being taken to prevent from further detraction. The small contact groups were formed to discuss finance, technology transfer, the atmosphere, biodiversity, forest, fresh water, pollution etc. The substantive work of conference, however, was achieved in closed-door negotiating sessions that produced **Agenda 21, the Rio Declaration and the Statement on Forest Principles.**

All these meetings revolved on two points i.e. the present deteriorated state of environment and the action line to be taken. On the former everybody agreed, however, on

the latter there was difference of opinion. According to BG, to take up any challenge the two points which required to be taken into account are : (i) *Jyñānayoga* - the path of knowledge, (ii) *Karmayoga* - the path of action (selfless).

लोकेऽस्मिन्निविधा निष्ठा पुरा प्रोक्ता मयानघ ।
ज्ञानयोगेन सांख्यानं कर्मयोगेन योगिनाम् ॥३.३॥

"Arjuna, in this world two courses of spiritual discipline have been enunciated by me in the past. In the case of Sāṅkhyayoga, the sādhanā proceeds along the path of knowledge; whereas in the case of Karmayoga, it proceeds along the Path of Action".
(BG III.3)

Lord Sri Krishna states, "for any knowledge which man desires to be attained is through consulting the scriptures (past research performed), experience, undertaking practice, realization and search the true nature". Thus one should perform his duty with the spirit of equanimity, the duties attaching to the order of society and stage of life he is placed in. The *Karmayoga* demands selfless action i.e. devoid of egoism, desire and attachment. It is the performance of duty/action line as laid down in scriptures (which is the result of past research and experience) without being possessed by the meum, attachment, lust, anger, greed and infatuation etc. and maintaining the proper equanimity is - *Karmayoga* or selfless action.

During the summit, Heads of states from various developed, developing and underdeveloped countries stressed the need for environmentally sound development. A number of leaders proposed new initiatives or committed additional financial support for global sustainable development as a part of *Karmayoga*. No doubt, every Head of State agreed in principle the need for doing some action line for the protection of Earth, however, on the practical or application aspect which was based on Agenda 21 there were some

disputed issues or difference of opinion.

The Agenda 21 - which is the programme of action or the *Karmayoga* - is perhaps the most important or the difficult output of the summit, required utmost care due to its complexities, as it involved innumerable categories or countries ranging from rich and poor, developed and under-developed, and industrialised and under-industrialised. One who is a source of pollution and the other whose natural resources are yet to be fully tapped. There are a few countries who are politically and financially strong while others do not have this factor into account. Therefore, with the diverse backgrounds but converging on a single platform i.e. for the survival of the humanity and to save the planet from the environmental deterioration was encouraging, however, with certain limitations. Some countries agreed, some didn't, some wanted compromises and some had certain reservations.

SUSTAINABLE DEVELOPMENT

To quote a few examples, like financing, most countries agreed, that it should come from each country's own public and private sectors. However, the provision of new and additional external funding is considered necessary if the developing countries are to adopt sustainable development practices. After protracted negotiations, an agreement was reached on a compromised text whereby, "Developed countries reaffirm their commitments to reach the accepted UN target of 0.7% of gross national product (GNP) for Official Development Assurance (ODA). Some countries agreed to reach the target by 2000. Most donor countries including most of the Nordic States, the Netherlands and France, supported the 2000 target date. The United Kingdom and Germany did not. The United States was not involved in these discussions since it did not make a commitment to 0.7% GNP for ODA and considered itself unable to reaffirm "this figure" (UNEP). Perhaps some of these developed countries didn't understand the act of sacrifice.

यज्ञदानतपःकर्म न त्याज्यं कार्यमेव तत् ।
यज्ञो दानं तपश्चैव पावनानि मनीषिणाम् ॥१८.५॥

"Acts of sacrifice, charity and penance are not worth giving up; they must be performed, all these are purifiers of wisemen" (BG XVIII.5)

This explains that the man/state/country to whom a particular duty has been assigned by the scripture/committee/organization with due regards to its grade in the society and stage of life should be performed accordingly.

On the transfer of environmentally sound technology to other nations, there were certain limitations with reference to finance and intellectual property rights. The delegates failed to understand that any intellectual achievement made by them may be their invention or discovery but forget that they themselves (Man) have been created by someone else not by themselves

सहयज्ञाः प्रजाः सृष्ट्वा पुरोवाच प्रजापतिः ।
अनेन प्रसविष्यध्वमेष वोऽस्त्विष्टकामधुक् ॥३.१०॥

"Having created mankind along with the spirit of sacrifice at the beginning of the creation the Creator, Brahmā said to them, 'You should prosper by this, may this, yield the enjoyment you seek.' " (BG III.10)

The commandment of the Creator, as quoted in the verse, "You shall prosper by this; may yield the enjoyment you seek;" represents the benediction pronounced by the Creator on the humanity at large. The Creator, thereby assured man that it was for his sake that he had evolved the institution of sacrifice in the form of "Svadharmā" one's allotted duty. Moreover, if one follows his allotted duty with all its limbs i.e. best of one's ability, he would continue to

prosper, and would suffer no fall and would ultimately rise to the superior level of existence, further, that sacrifice in the form of performance of one's prescribed duties would continue to fulfil one's earthly requirements as well.

MEASURE OF SUCCESS

Regarding the measure of success, the Conference Secretary- General, Maurice Strong stated that although Agenda 21 had been weakened by compromises and negotiations, it was still the most comprehensive and, if implemented, effective programme of action ever sanctioned by the International Community. "You can't save the world in a one-shot quick fix," Mr. Strong also noted, "We simply don't have another twenty years to squander. We have to make sure that the road from Rio is a fast tract". The Earth Summit, undoubtedly, has been a practical step of action (*Karmayoga*) performed by man to save the planet.

ETHICS FOR FUTURE

Five years after the 1992 Earth Summit in Rio, Agenda 21 remains, for the most part, a dead letter. How long can we afford the luxury of inaction? "We are hurtling into the future, without any brakes and in conditions of zero visibility. Yet, the faster a car goes, the brighter its headlights must be", warned Federico Mayor, Director-General of the UNESCO. Without proper attention, future generations are in danger of becoming the prisoners of unmanageable processes such as population growth, degradation of the global environment, growing inequalities between North and South and within societies, rampant social and urban apartheid, threats to democracy, mafia control.

Jerrmone Binde, the Director of Analysis and Forecasting Unit, UNESCO states that modern societies suffer from a dysfunctional relationship to time. A major contradiction is at work: on the one hand, societies need to project themselves into the future in order to survive and prosper. On the

other hand, they must increasingly act on 'real time' and adopt short-term policies to cope with the challenges of globalisation while facing the onslaught of new technologies. There is no escape, it seems, from the tyranny of emergency: financial markets, the media, politics and development aid, all march to the same tune.

Far from a passing phenomenon the logic of emergency is fast becoming a permanent feature of our societies and of our policies. And yet, as evidenced by the contradictions of humanitarian aid or, in Europe, of the struggle against unemployment, short-term and emergency measures have little impact on long-term problems. Development in the 21st century will require long-term vision and long-term investments, such as in education and health for all, science and technology, especially new information and communication technologies, and infrastructure.

UNESCO has taken steps in that direction when it convened an international meeting in July 1997 in Rio de Janeiro on "the ethics of the future". An ethics of the future means more than a long-term vision. It means, first of all, that responsibility should now be turned toward the distant future. What has been entrusted to us by nature and by past generations is fundamentally fragile and perishable; life, the earth, the city itself. We need to broaden the social contract to encompass future citizens. Our sense of responsibility toward them is a condition of their survival. Secondly, it also means the exercise of the principle of precaution, to take into account the possible consequences of our actions and also the uncertain, even the unforeseeable. Thirdly, it means that heritage extends beyond stones. It encompasses the intangible and the symbolic, the ethical, the ecological, the genetic.

Heritage thus becomes a foundation of human responsibility toward future generations, for "in the absence of a link between the past and the future, any reference to tradition is doomed to appear as an ideological conceit, or worse,

as a regressive fundamentalism", as the Belgian philosopher Francois Ost said.

Caring about the future has profound political implications. Max Weber warned that "the proper business of the politician is the future". We must steer a path that will bring us closer to the horizon of the future, through the formulation of intermediate projects still within our reach. An ethics of the future is quite simply an ethics of time, which rehabilitates not only the future itself, but also the past and the present. Those who would have us ignore the plight of the poor and the excluded are usually the same who would have us turn a blind eye on disappearing languages or ignore the hole in the ozone layer.

An ethics of the future will be useless if it is not translated into educational, scientific, technological, economic, financial and political measures. For millions of human beings, an ethics of the future would bring the promises of the future closer to the present.

SACRIFICE, THE PRIVILEGE OF MAN : ENVIRONMENTAL PERSPECTIVE

यज्ञार्थात्कर्मणोऽन्यत्र लोकोऽयं कर्मबन्धनः ।
तदर्थं कर्म कौन्तेय मुक्तमङ्गः समाचर ॥३.९॥

"Man is bound by his own action except when it is performed for the sake of sacrifice. Therefore, Arjuna, perform your duty efficiently, free from attachment for the sake of sacrifice". (BG III.9)

सहयज्ञाः प्रजाः सृष्ट्वा पुरोवाच प्रजापतिः ।
अनेन प्रसविष्यध्वमेष वोऽस्त्विष्टकामधुक् ॥३.१०॥

"Having created mankind along with the spirit of sacrifice at the beginning of the creation, the Creator, 'Lord' said, 'You shall prosper by this; may this yield the enjoyment you seek!'" (BG III.10)

Every moment a living being interacts with the nature. The interaction may be with the abiotic or biotic factors. Further, this interaction may be in the form of competition, co-operation, dedication or sacrifice.

All organisms have to compete in nature for their survival. The competition may be with their own species (intra-specific), other species (inter-specific) or with the other environmental factors. It is well established that it is the strong one which survives and the feeble is either exterminated or left in the background. The intra-specific or inter-specific struggle is more or less for food, shelter, predation, antipredation or for reproduction etc. In this case, the competition is more based on the acquisition of superior mor-

phological adaptations (physical strength) than the physiological adaptations. A tiger kills various animals by its sheer physical strength. However, a deer evades a tiger by running fast. It is, therefore, the physically strong and fit which survives in nature. Contrarily, the pattern is reverse where it is more physiological than morphological. A fish living in marine conditions has to cope with the osmoregulation problems. Bony fishes in sea are not in osmotic equilibrium with the hyperosmotic medium, for their osmotic concentration is about one third than that in sea water. Since they are not impermeable, they lose water to the more concentrated sea water and are actually in constant danger of dehydration. They compensate for the loss of water by drinking the very sea water and by absorbing water and salt from the intestine. The kidney of fish is unable to produce a concentrated urine to help eliminate the salt. Instead, the gills secrete excess salt into the seawater. The terrestrial animals lose water to their environment. They preserve water to prevent from dehydration. This is done by drinking water, or through oxidation of food (physiologically in the body) etc. In mammals, the antidiuritic hormones are secreted by the posterior lobe of the pituitary gland. The hormone regulates the reabsorption of water by the renal tubules of the kidney. This enables the animal to survive in the environment. The phenomenon of competition and law of survival inexorably prevails in the living being for its self or individualistic survival.

During the course of evolution, for survival, with the mode of competition at the individual level, the behaviour of co-operation is also developed. This has led to the formation of social organisation. This type of organisation is prevalent both in physically strong as well as in the weak animals. Further, this intra-specific co-operation is not only for the purpose of attacking the predators but also for the anti-predator behaviour. The lions, no doubt, are physically strong but they exhibit both competitive and co-operative behaviour. For example, the females of a pride never permit a strange female to join the group and accepts only some of

its own female offspring into the band. Even when the prey is abundant, there is a limit to the number of animals in a pride. The lions compete to stay with the pride probably because, in any case, there is a limit of resources available in a pride's territory. It is interesting to note that there is a competition to remain in the pride, as expulsion from the pride is not an unexpected event. As for the co-operative behaviour, the animals join forces to defend the territory or to kill a cape buffalo. In this act, all the co-operators stand to gain an immediate benefit when they might have not experienced had they been alone. Co-operation leads to common reward. A flock of bird alerts other birds at the sight of a predator. Similarly, a deer in a herd alerts his fellow animals on the sight of a lion, tiger or any other predator. All these behaviours are basically selfish, though through the mode of co-operation i.e. by give and take method.

The formation of social organisation in animals, no doubt, has brought a positive interaction by taking care of other members of the group, however, it is based on self interest. Every individual of a group is, more or less, concerned about its survival.

God has provided a unique opportunity and means to man not only to care for himself but also other living beings. He by virtue of desire and intelligence has been rearing animals, growing plants, thereby increasing their population. This role of His may be termed as a constructive role for the nature. Nature believes in rationale creation and not destruction, The former being the progressive part of nature has been an asset not only to man but also to all plants and animals including other abiotic factors. Further, a man is considered to be highly evolved in thinking and deeds due to which he has been able to bring industrial revolution. This industrialisation has resulted in the change of life style of man, to this he has termed it as a sign of prosperity and development. However, due to his greed and insatiable desire, the natural wealth of the nature has been exploited to

the fullest. This has led to pollution and deforestation. The impact of it has threatened the very functioning of the ecological cycle of nature. Pollution in the environment is a man made phenomenon. It is defined as the introduction by man into the environment of substances or energy liable to cause hazards to human health, harm to living resources and ecological systems, damage to structure or amenity, or interference with legitimate uses of the environment. The loss of forests has resulted in the decimation of plant and animal species i.e. loss in biodiversity. The impact of pollution and deforestation has affected the ozone layer and has caused the green house effect.

एवं ज्ञात्वा कृतं कर्म पूर्वैरपि मुमुक्षुभिः ।
कुरु कर्मैव तस्मात्त्वं पूर्वैः पूर्वतरं कृतम् ॥४.१५ ॥

"Having known thus, action was performed even by the ancient seekers for liberation; therefore, you also perform such actions as have been performed by the ancients from the beginning of time".
(BG IV.15)

नियतस्य तु संन्यासः कर्मणो नोपपद्यते ।
मोहात्तस्य परित्यागस्तामसः परिकीर्तितः ॥१८.७ ॥

"(Prohibited acts and those which are motivated by desire should no doubt be given up). But it is not advisable to abandon a prescribed duty. Its abandonment through ignorance has been declared as Tāmasika".
(BG XVIII.7)

दुःखमित्येव यत्कर्म कायक्लेशभयात्त्यजेत् ।
स कृत्वा राजसं त्यागं नैव त्यागफलं लभेत् ॥१८.८ ॥

"Should anyone give up his duties for fear of

physical strain, thinking that all action is verily of the nature of discomfort, practising such Rājasika form of renunciation, he reaps not the fruit of renunciation". (BG XVIII.8)

कार्यमित्येव यत्कर्म नियतं क्रियतेऽर्जुन ।

सङ्गत्यक्तवा फलं चैव सत्यागः सात्त्विको मतः ॥१८.९॥

"A prescribed duty which is performed simply because it has to be performed, giving up attachment and fruit, that alone has been recognized as the Sāttvika form of renunciation". (BG XVIII.9)

न द्वेष्ट्यकुशलं कर्म कुशले नानुषज्जते ।

त्यागी सत्त्वसमाविष्टो मेधावी छिन्नसंशयः ॥१८.१०॥

"He who shirks not from action which does not bring lasting happiness, nor gets attached to there which is conducive to blessedness, imbued with the quality of goodness, he has all his doubts resolved, is intelligent and a man of true renunciation". (BG XVIII.10)

न हि देहभृता शक्यं त्यक्तुं कर्माण्यशेषतः ।

यस्तु कर्मफलत्यागी स त्यागीत्यभिधीयते ॥१८.११॥

"Since all actions cannot be given up in their entirety by anyone possessing a body, he alone who renounces the fruit of actions is called a man of renunciation". (BG XVIII.11)

अनिष्टमिष्टं मिश्रं च त्रिविधं कर्मणः फलम् ।

भवत्यत्यागिनां प्रेत्य न तु संन्यासिनां क्वचित् ॥१८.१२॥

"Welcome, unwelcome and mixed-threelfold, indeed, is the fruit that accrues hereafter from the actions of the unrenouncing. But there is more even for those who have renounced". (BG XVIII.12)

योगयुक्तो विशुद्धात्मा विजितात्मा जितेन्द्रियः ।
सर्वभूतात्मभूतात्मा कुर्वन्नपि न लिप्यते ॥५.७ ॥

"The Karmayogi, who has fully conquered his mind and mastered his senses, whose heart is pure, and who has identified himself with the Self of all beings (viz., God), remains untainted, even though performing action". (BG V.7)

विद्याविनयसंपन्ने ब्राह्मणे गवि हस्तिनि ।
शुनि चैव श्वपाके च पण्डिताः समदर्शिनः ॥५.१८ ॥

"The wise look with the same eye on a Brahman endowed with learning and culture, a cow, an elephant, dog, and a pariah too". (BG V.18)

उदाराः सर्व एवैते ज्ञानी त्वात्मैव मे मतम् ।
आस्थितः स हि युक्तात्मा मामेवानुत्तमां गतिम् ॥७.१८ ॥

"Indeed all these are noble, but the man of wisdom is My very self; such is My view. For such a devotee, who has his mind and intellect merged in Me, is firmly established in Me alone, the highest goal". (BG VII.18)

No doubt, the advanced technologies acquired by man are useful for his allround development but their irrational use has caused deleterious effect in the functioning of nature. Moreover, the damage being caused in the nature cannot be

overlooked for long. It is high time that serious attempts should be made to rectify the mistakes. This can be done by sacrifice. Man alone is qualified to perform the discipline of sacrifice. In this case man should feel that he is part of nature (BG. III-28). The act of sacrifice is performed by the path of knowledge along with the path of action (BG. III-3). The discipline of Karmayoga or the path of action consists in honestly performing, as a matter of duty, such actions as are prescribed by the scriptures with due regard to one's order in the society, stage in life, nature and circumstances as are obligatory on him, renouncing the sense of possession, attachment and desire in respect of such actions and their fruit, and maintain attitude of indifference towards their fruit or otherwise their final outcome (BG. III-47,48) and finally remaining ever contented with whatever is ordained by the God. At this stage man overcomes all evils in the form of likes and dislikes, lust and anger and begins to view all alike. Further, he sees the man and other creations as a part of God. (BG.IV-15, XVIII 7-12, V-7, 18, VII-18).

Sacrifice, therefore, is the highest conduct of life and the opportunity is provided only to man to translate it into action. It only prevails at ethical, religious and spiritual level. It is practiced by those who have attained the stature of 'enlightenment'. In this sacred act one offers his best for the well-being of others, without any pretext or feeling of return. However, with the law of reciprocal action both giver and the receiver are benefitted. To quote some examples, the well drains out water for the benefit of man. However, in return the ground water level is restored with freshwater. The ocean allows its infinite water to evaporate to form cloud so as to rain at various places. The ocean level is maintained by the inflow of rivers into the sea.

No good act of one's goes unrewarded, but the action has to be initiated by the donor. The act of dedication is performed by many ways. By imparting knowledge to others, the capacity to teach increases. It is like supplying manure to the agriculture, thereby, getting better yield. The

dedication, at times, demands the righteous war against wicked (BG.II-31). The war against those who are involved in the destruction of nature (BG-XVI 7-18) in eliminating the biodiversity, or the ecological cycle.

स्वधर्ममपि चावेक्ष्य न विकम्पितुमर्हसि ।
धर्म्याद्धि युद्धाच्छ्रेयोऽन्यत्क्षत्रियस्य न विद्यते ॥२-३१ ॥

"Besides considering your own duty too you should not waver, for there is nothing more welcome for a man of a warrior class than a righteous war." (BG II-31)

प्रवृत्तिं च निवृत्तिं च जना न विदुरासुराः ।
न शौचं नापि चाचारो न सत्यं तेषु विद्यते ॥१६.७ ॥

*"Men possessing demoniac disposition know not what to do and what to refrain from : neither purity, nor right conduct nor truth is found in them".
(BG XVI.7)*

The acts which are directed towards the general welfare of man are commendable. They are designated as ethical acts and worth performing and such action as is attended with evil consequences is worth eschewing and one should abstain from it. Men possessing demoniac disposition never realize that they should undertake only such actions as are worth performing and should abstain from those which are worth eschewing; hence it is observed that these people are guided in their activities by their own whims or caprices. Their entire actions and personality appears to be polluted.

"Men possessing a demoniac disposition say this world is without any foundation, absolutely unreal and Godless, brought forth by mutual union of the male and female, hence conceived in lust; what else"?

They believe that this universe, consisting of animate and inanimate creation, has no basis in the shape of God or there is no moral law. They have a feeling that no living being had any existence prior to its birth nor does a creature have any life after death, nor there is any creator or controller like God. These men have no other objective to fulfil in life except the gratification of carnal desires.

"These men of atheistic persuasion deny the existence of God. They are body-centered or materialists. Hence, their nature gets debased, they never feel inclined to perform any virtuous deed. All their resolves are made with the aim for sensuous enjoyment. Their mind is ever busy hatching evil designs against others. In this way they harm themselves too. They habitually perform their mind, speech and body in gruesome deeds that tend to exterminate the animate and inanimate creations.

Further, whatever their intellect, mind or body may be, it is solely intended to torment or obliterate the entire creation, thereby, effecting the smooth functioning of the ecosystem. The accumulation of wealth and enjoyment of luxuries of various kinds is the sole aim of their existence.

आशापाशशतैर्बद्धाः कामक्रोधपरायणाः ।

ईहन्ते कामभोगार्थमन्यायेनार्थसञ्चयान् ॥१६.१२॥

"Held in bondage by hundreds of expectation and wholly giving themselves up to lust and answer, they strive to amass by unfair means hoards of money and other objects for the enjoyment of sensuous pleasures". (BG XVI.12)

इदमद्य मया लब्धमिमं प्राप्स्ये मनोरथम् ।

इदमस्तीदमपि मे भविष्यति पुनर्धनम् ॥१६-१३॥

"They say to themselves, this much has been secured by me today and now, I shall realize this ambition, so much of wealth is already with me and yet again this shall be mine."

(BG XVI.13)

अहंकारं बलं दर्पं कामं क्रोधं च संश्रिताः ।

मामात्मपरदेहेषु प्रद्विषन्तोऽभ्यसूयकाः ॥१६.१८॥

"Given over to egoism, brute force, arrogance, lust, anger etc., and culminating others, they hate me (inner controller of all) dwelling in their own bodies as well in those of others." (BG XVI.18)

Man is evolved to give not to grab or destroy the natural wealth that has been achieved after millions of years. The acts of man are observed to be not friendly towards nature where he is born or where his children will take birth. It is high time that with the sense of sacrifice, man should stop exploiting nature and its natural wealth, and prevent the loss of biodiversity. Man should enjoy nature and use nature by being part of nature.

POVERTY AND ENVIRONMENT: BREAKING THE VICIOUS CIRCLE THROUGH BHAGAVADGITA

Excess of every thing is bad. The word excess has been defined as going beyond proper limits. A man involves in this unethical tendency either due to its greed or desire (to have more than need) or due to deprivation. It has been observed that man is involved in unethical acts when these factors come into force.

The rich and industrialized countries are involved in excessive exploitation of natural resources not for the survival but to add in their richness and to collect all possible comforts for their living, so as to make their living place—the so called heaven. For this they indulge in heavy industrialization, deforestation and over-exploitation of natural resources. This has led to the release of toxicants in the atmosphere leading to the green house effect and ozone depletion. On the other hand, the deprived are forced to destroy the natural wealth for their very existence. In Somalia, for example, farmers are eating seed grains meant for sowing for the next season. In Sahel, women are walking 15 kms. for a bundle of fuel-wood. In west Asia, over-irrigated land is becoming saline. In Latin America and throughout the humid tropics, genetically rich forests are being felled far beyond the margin of increase. Every where marginal land is being over-exploited, leaving its occupants more vulnerable to the vagaries of climate.

The poor countries use fewer resources, create less waste, do less harm to the global environment than the rich. Wasteful over-consumption remains the single most powerful threat to the world environment. There is threshold of poverty, however, below which the poor too becomes disproportionately destructive. There comes a point when present

survival means destroying resources which would have nurtured the poor for years. The vivid image of this is the farmer eating his next years seed grains. (Our Planet, UNEP, Vol. 5:2, 1993)

On one side there are people who are rich with surplus material and on the other side there are some whose very survival is at stake. The reasons of all these are excessive greed and desire or deprivation. They all are destructive for the well-being of nature and its resources.

Bhagavadgita has thrown light on these aspects and also given solution to overcome this burning problem facing the planet today.

काम एष क्रोध एष रजोगुणसमुद्भवः ।
महाशनो महापाप्मा विद्ध्येनमिह वैरिणम् ॥३.३७॥

"Desire it is, wrath it is, born of strand of passion, greatly devouring, greatly sinning, know it to be the enemy here." (BG III.37)

The impulse of attraction and repulsion are present in all men. They show their effect on human mind as soon as his senses come in contact with any object. Desire springs from attraction and if, he is unable to achieve it, desire transforms into anger or any other act which a man may use to achieve it. This effort may include ethical or unethical means. Therefore, the lord states that desire alone is the root of all sins, and subsequent actions have nothing to do with it. 'Desire is insatiable' it can never be satiated by the enjoyment. The more one indulges in it, the more he is engrossed in it or in other words the more we indulge in the sense of enjoyment, the stronger is our appetite for enjoyment.

आवृतं ज्ञानमेतेन ज्ञानिनो नित्यवैरिणा ।
कामरूपेण कौन्तेय दुष्पूरेणानलेन च ॥३.३९॥

"As the fire cannot be satiated by feeding it with fuel, so is the desire, it cannot be satisfied by supplying the sense objects". (BG III.39)

Therefore, one should never imagine that he will be able to conquer the enemy in the shape of desire by pursuing the policy of appeasement and the bait of enjoyments. He must follow the policy of chastisement with regard to same. Desire is the root cause of all evils. Man is forced to commit sin against his will, moreover, it is desire alone which leads man to develop attachment for various objects of enjoyment and drags him to sinful acts.

धूमेनाव्रियते वह्निर्यथाऽऽदर्शो मलेन च ।
यथोल्बेनावृतो गर्भस्तथा तेनेदमावृतम् ॥३.३८ ॥

"As a flame is covered by smoke, mirror by dirt, and embryo by the amnion, so is the knowledge covered by it (desire)". (BG III.38)

The smoke, dirt and amnion here means that it is desire which veils the good senses of man by transforming itself into the three fold evils of impurity, distraction and obscuraton. The analogy of smoke, dirt and amnion employed in this verse denotes that it is desire itself which veils the positive knowledge of a man by transforming itself of impurity, distraction and obscuraton. Here smoke represents the evil of distraction or restlessness. Just as the smoke though ever unsteady, covers up the fire, even so is the evil of distraction, which is of the nature of restlessness, shrouds knowledge. For until the mind has become calm and steady. Knowledge cannot illumine it as it remains dormant and hidden. Dirt is the symbol of impurity. Just as dirt accumulates on the surface of the mirror, it can no longer reflect any object, even so when the mind gets soiled by the impurities in the form of sin, it is no longer able to reveal the true nature of things or points out our duty towards the nature.

Even so 'amnion' stands for the veil of ignorance that shuts out the light of truth. Just as the embryo remains enclosed on all sides by the amnion, and no part of it is visible, even so one's knowledge is veiled by ignorance. Therefore, it is desire alone which makes the mind restless by fostering the thirst for various forms of enjoyment as evident in the industrialized countries.

Bhagavadgita has the answer too. As for the smoke covering fire, a little blowing will set ablaze and the fire will disappear. Little effort is required to remove the dirt from the mirror. Lastly, time and regulated living are the factors for the embryo to develop and be delivered as a baby. Time and self preparations are necessary to eliminate the desire which is under the influence of mind. The knowledge at this stage denotes enlightenment, for the benefit of mankind, for those who do have the technology for the conservation of nature, for those who are forced to cut the trees for their very survival and existence.

For the divine cause, i.e. for the sustainable development of the planet, protecting the ecosystem and going to the root cause of deforestation and pollution, rational utilization of the earth resources and to provide support to the have-nots by haves an action line is required. The clear grasp of these factors are classified here as knowledge. Intuiting the reality is realization. It is impossible for a man/leader/nation to attain the position of enlightened until he has conquered desire. The conquest of desire by the affluent nations is the first step towards the implementation of the action line.

असंशयं महाबाहो मनो दुर्निग्रहं चलम् ।
अभ्यासेन तु कौन्तेय वैराग्येण च गृह्यते ॥६.३५॥

The lord states: "The mind is restless no doubt, and difficult to curb; but it can be brought under control by repeated practice and by the exercise of dispassion".
(BG VI.35)

In order to cast the mind substance into the mould of a desired object, the mind has to be repeatedly weaned from other objects of attraction and fixed on the object of meditation i.e. survival of the planet. Repetition of this attempt is known as 'practice'. Practice here means in directing the flow of one's thought repeatedly towards the main aim or objective.

It is important to note that until poverty exists, man's hunger and his attempts to survive will exist, the environmental problems of deforestation, irrational depletion of earth resources, and pollution cannot be solved.

Therefore, all efforts should be directed towards the cause of poverty by repeated practice, i.e. making repeated attempts until the goal is achieved. Poverty cannot be eliminated in one stroke. Further, it is to be remembered that one's practice will meet with success only when it is carried out with faith and reverence, and is continued without break. The efforts to eliminate poverty can only be achieved through 'sacrifice'.

Man alone is qualified to adopt the discipline of sacrifice. The man at this stage feels that he is a part of nature. In the present context, sacrifice with material possession means devoting one's wealth obtained by righteous means, through performance of duties enjoined by one's order in the society, to the service of the people giving up the sense of possession, attachment and the desire for fruit. For a common man it is the construction of tanks, public utility places, providing medicines to the poor and needy. Likewise, for a developed and rich country, it is to provide food, alternative fuel resources and other necessary assistance to the under-developed countries.

The scriptures state that one should perform this sacred act according to one's qualification or the requirement of the recipient.

All these acts of sacrifice should be carried out intelligently and without any feeling of possession, and desire for fruit. This mode of sacrifice has been termed as 'sacrifice in the shape of

wisdom'.

Unfortunately, in today's world all these acts are performed with some purpose, it may be politically, militarily or otherwise. Further, these countries in return expect unqualified support in their international affairs. The demand for the support may be just or unjust. This is one reason the world is always threatened actively or passively and directly or indirectly by the aid giving nations. This is one of the major causes that the world is still poor. Some may be poor by way of finance, food etc. others may be rich in terms of money and industrialization, but poor in terms of humanity and global brotherhood. As they lack inclination towards selfless sacrifice for the well-being of mankind of which they also form a part.

The vicious circle of poverty and the environment in the planet can only be broken down by this. It is only then that the man can proudly say: "It is our planet and its wealth belongs to all living beings."

LIVE AND LET LIVE

Endowed with the power of reasoning, man clearly occupies the topmost place among God's creatures; but what a pity that he so often acts against the code of conduct implicit in a rational being. At times, his deportment is even worse than that of animals supposedly on a lower rung of evolution.

Lord Krishna, while unfolding the purport of *Karma* (Bhagavadgita, XVI, 24) to Arjuna, aptly points out that he may or may not believe in the existence of God, he may or may not seek guidance from the experiences of the great people of the past or from the scriptures, but he can certainly rely on his own reasoning in taking a decision as to what he should do or not to do.

तस्माच्छास्त्रं प्रमाणं कार्याकार्यव्यवस्थितौ ।
ज्ञात्वा शास्त्रविधानोक्तं कर्म कर्तुमिहार्हसि ॥१६.२४॥

"Therefore, the scripture alone is your guide in determining what should be done and what should not be done. Knowing such action as is ordained by the scriptures". (BG XVI.24)

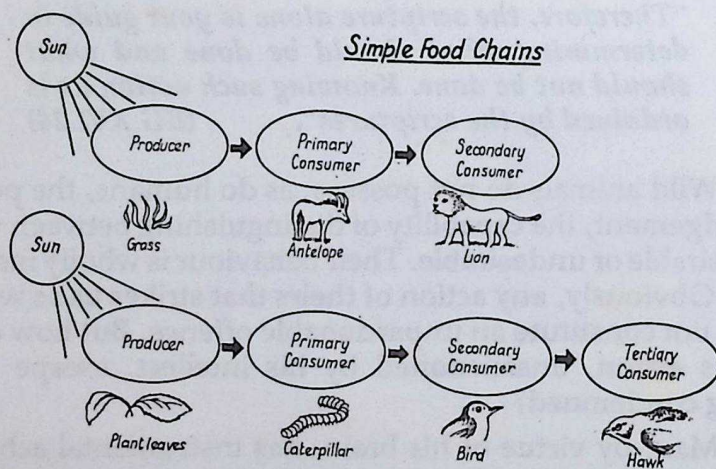
Wild animals do not possess, as do humans, the power of judgement, the capability of distinguishing between what is desirable or undesirable. Their behaviour is wholly instinctive. Obviously, any action of theirs that strikes us as wrong does not constitute an unpardonable offence. But how can a man's action, unsanctioned by his intellect, escape from being condemned?

Man, by virtue of his brain, has instrumental achievements to his credit. His action, or *Karma* has a great bearing on earth. It is, therefore, essential that he conducts himself in a manner that harmonizes with all that is good. He must

be cautious not to get ensnared by greed or other vices. His brain, and consciousness—all must be imbued with a spirit of sacrifice to guard him against a fall and to enable him to enjoy peace of mind.

The theory of *Karma* makes it abundantly clear that man should aim only to such things as are conducive to his and to other well being. He should weigh the pros and cons of an action before he sets about it and eschew what is not right or lawful. He should so regulate his actions that the biodiversity which has evolved along with him is not disturbed. It would be nothing sort of sin to destroy or attempt to destroy what is available for general welfare.

Causing pain to a defenceless animal is unjustified, although animals are often slaughtered or indiscriminately killed by man. The monetary thrill or gain involved in the sport of destroying the life of an animal is the result of man's indiscretion and is in opposition to the Almighty's plan and purpose. If a man puts himself in the place of animals and feels the agony to which they are subjected as a consequence of his imprudence, he can only shudder at the very thought of ending their lives. Unwarranted destruction of life not only affects biodiversity, it also possess a serious ecosystem balance



Simple Food Chain

problem, imperilling the very existence of humans.

Further, Gita (BG. XVI-2) exhorts a man to follow the path of non-violence. In this context, non-violence means not arresting the progressive life of any entity. It has to be noted that killing animals for self gratification is unethical. Many people are addicted to eating animals, inspite of having ample supply of grains, fruit and milk. There is no necessity for animal killing. This injunction is for every one. People who desire to make advancement towards enlightenment and pursue the ethical path should not commit violence to animals. Real purport of non-violence is not checking anyone's spiritual or evolutionary life. The animals are also making progress in their evolutionary life by transmigrating from one category to another as required by the environmental changes. This can be viewed by the fact that if a particular species is indiscriminately killed and number decimated then their evolutionary progress may be checked. Presence of more animal number means more probability of survival. Further, survival and distribution of animals at various places provides an opportunity for them to interact with the environment so as to evolve and propagate. Thus the progress of a living entity should not be checked simply to satisfy one's palate. Therefore, inculcation of non-violence should be in man's frame of mind and his action be ethically oriented.

We pleaded against man's killing of birds and wild animals. But how do we account for animals killing animals? Surely, the answer is to be sought in the maintenance of food chain. To illustrate the point, the lion, a carnivore, cannot exist by eating grass or the like. It will not be transgressing divine law if it kills other animals to satisfy hunger. But when man who has the ability of rationalizing follows in the lion's footsteps, he will be committing a sin. This does not, however, imply that he should not make use of nature. He should, but ever bearing in mind the concept of sustainable utilization and the motto of 'live and let live.'

BEASTLY TRADING AND DIVINE ROLE OF MAN IN NATURE

Man in recent times, has been exploiting nature for his own selfish purposes. This activity includes deforestation, over-fishing, indiscriminate killing of animals, poaching and release of pollutants. Further, this is going on every moment in some part of the world and if this continues unabated then the day is not far when the very survival of several species may be threatened. This loss in biodiversity and unnatural changes in the environment may also affect the ecosystem. Moreover, it is pity that a species which may have taken millions of years and numerous generations to evolve to the present day form may be eliminated by man for his unending selfish purpose, greed for monetary gain, momentary lingual taste and for fun or game.

Classic examples are over exploitation includes the fishes and the animals. In recent years there has been depletion of fishes of some 25 major species in the Atlantic as their catch fell below 10% of the original catch, similarly rockfish of Chesapeake Bay are endangered. In both cases it is due to overfishing and pollution. Coral reefs are threatened due to the use of explosives for fishing and for the collection of polyps, for ornamentation or construction materials. Many species that are naturally rare or are at the verge of extinction are placed in greater jeopardy by trade in their products or for their value as exotic pets. All the five of the world's rhinoceros are endangered by trade for horn. The African elephant is poached for its ivory, which has led to their decline in population.

Illegal trading in rare or disappearing species as an international business turns over more than 1.5 billion dollars a year, second only to smuggling in drugs or arms. It directly affects the

populations of more than 37,000 animal and plant species and represents a severe threat to their survival.

The international mafias make a fortune. They buy a whole range of cheap animal and plant products from the South and then sell for large sums of money. It is estimated that each year one and a half million caiman skins leave Brazil, Bolivia and Paraguay.

The most important markets are to be found in the rich countries; the chief buyers for these wildlife products are in Japan, the USA and the EU. In the USA, illegal trading accounts for more than 190 million dollars, while illegal trading accounts for more than 265 million (Source : Traffic USA).

This unregulated traffic squanders natural resources and is one of the most dangerous forms of wildlife and biosphere destruction. It does serious damage to Southern societies rich in biodiversity, as it yields no lasting profits for them and only enriches the intermediaries. It pays no taxes or customs duty. The returns for the poachers are not meagre too, because what they receive for illegally capturing or gathering macaws, tigers, crocodiles or orchids is very little compared to what is paid for them in the rich countries. On the contrary, it threatens the sustainability of the ecosystems where they live and perpetuates inequalities between the rich consumer countries and the poor producer countries which hardly get anything out of the deal.

NATURE IN RUINS

The consequences could hardly be more dramatic. Animals such as the rhinoceros, the tiger, the leopard, the otter, the South-American caiman, the cacaw, some primates, butterflies, tortoises, orchids, cacti, carnivorous plants, the Bromeliaceae, trees bearing precious wood like the mahogany, palisander or araucaria, are just a few examples. The list goes on.

Many animals are sadly sacrificed for one specific product. But in the traffic of live specimens the mortality is very high, both at the moment of capture and during ship-

ping; many animals die so that a few can reach their destination alive.

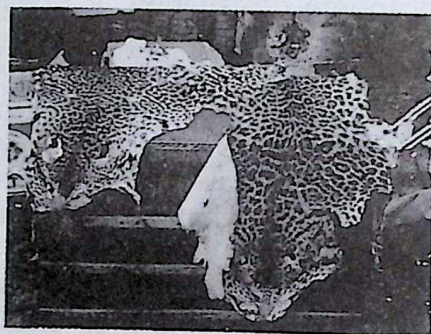
Traditional, more respectful, forms of hunting and gathering are abandoned, while poachers sometimes even cut down trees to reach the highest nests; males and females are hunted indiscriminately, and so on.

Illegal trading helps to spread diseases. The exporting of more than 250 million "*Rana tigerina*" frogs, much appreciated in the French cuisine, has caused a considerable decrease in the population of these amphibians in India and Bangla Desh, and a subsequent increase in the number of mosquitoes and therefore in malaria.

THE BIG WILDLIFE MARKET

Appovement annual trade
(legal and illegal)

50.000	living primates
140.000	tusks of African elephant
10,000.000	skins of reptiles
9,000.000	orchids
5,000.000	living birds
3,000.000	living turtles
15,000.000	skins of felines and other mammals (otters, primates, kangaroos, deer, etc.)
600,000.000	living ornamental fishes for aquariums
	2 tons of coral
8,000.000	cactuses
250,000.000	frogs for restaurants



For a coat made of lynx or ocelot furs 20 to 30 animals will be killed.

Source : Trafic USA 1992

Surplus value of the illegal traffic, profit of the intermediaries:

<i>Price in the country of origin</i>	<i>Consumer price (US\$)</i>	
Black cackatoo (<i>Probosciter aterrimus</i>)	6	9.231
Macaque (<i>macaca nemestrina</i>)	11,5	1.538
Chimpanzee	77	7.692
Paphlopedilum Orchid	14,5	6.923
Coplapoa Cactus	15	7.692

Main Exporters	Intermediaries	Main Importers
*Philippines : live primates, shells, coral and ornamental fish. *Indonesia: reptile skins and orchids. * Singapore : ivory and reptile skins. * Taiwan : live butterflies, rhinoceros horns. * Thailand: orchids. * Argentina: parrots and other live birds. * China: Cat skins, orchids. * Hong-Kong: ivory *Mexico : cacu * Other important exporting countries : Brazil, Paraguay, Bolivia, Colombia, Nigeria, Senegal, Tanzania, Zaire, Congo, USA, South Africa, South Korea, Turkey and the CIS	* Used for "laundering" and legitimating merchandise and flogging documents. * Prime offenders in Europe: Austria, Greece, CIS, Portugal, Spain and the countries of the East. * Distribution channels: Arab Emirates, Hong Kong and Taiwan for elephant tusks and rhinoceros horns; French, Guyana, Surinam, Bolivia, Argentina, Paraguay, Colombia, Senegal and Tanzania for exotic birds; Others such as Thailand, Taiwan, Singapore and Indonesia are stopovers for a wide range of products.	* Japan is the most important wildlife market in the world. Ivory, skins, primates, orchids and tropical wood stand out. * The European Community receives a log of birds and exotic wood. * The USA and Canada import more than 10,000 live primates for research and more than 450,000 live birds every year. * China is one of the largest importers of all sorts of plant and animal wildlife elements.

In Bhagavadgita, Lord Krishna spoke to Arjuna that it is due to man's unlawful desire that has resulted in the obstruction of the natural cycle. It has to be born in mind when desire attains the stature of greed then it becomes an enemy of man. Even a knowledgeable man who is supposed to have purity of heart, steadfastness, devotion for knowledge, harmlessness, mercy to beings and unbaffled by desires is transformed into a devil with demonical nature when he is trapped by the virtues of desires. Having attained this, he develops ostentation, fake pride, wrath and ignorance. This also leads to the dwindling of his intellect. Moreover, his sense, mind and wisdom appears to be covered by the thick smoke of desires.

दम्भो दर्पोऽभिमानश्च क्रोधः पारुष्यमेव च ।
अज्ञानं चाभिजातस्य पार्थ संपदमासुरीम् ॥१६.४ ॥

"Hypocrisy, arrogance and pride, and anger, sternness and ignorance too - these are the marks of him, who is born of demonic properties". (BG XVI.4)

असत्यमप्रतिष्ठं ते जगदाहुरनीश्वरम् ।
अपरस्परसंभूतं किमन्यत्कामहैतुकम् ॥१६.८ ॥

"Men possessing a demoniac disposition say this world is without any foundation, absolutely unreal and godless, brought forth by mutual union of male and female and hence conceived in lust". (BG XVI.8)

आवृतं ज्ञानमेतेन ज्ञानिनो नित्यवैरिणा ।
कामरूपेण कौन्तेय दुष्पूरेणानलेन च ॥३.३९ ॥

"Arjuna, knowledge stands covered by this eternal enemy of the wise as the desire which is insatiable like fire". (BG III.39)

इन्द्रियाणि मनो बुद्धिरस्याधिष्ठानमुच्यते ।
एतैर्विमोहयत्येष ज्ञानमावृत्य देहिनम् ॥३.४० ॥

"The senses, the mind and intellect are declared to be its seat; screening the light of Truth through these; it (desire) deludes the embodied soul".
(BG III.40)

Devilish people, with this frame of mind, lose truth in them and say that the world is without God and the universe is born of a mutual union brought by lust nothing else. Therefore, now filled with insatiable desires and arrogance, holding evil ideas they come forth to work in the nature with cruel deed and seek to gather wealth by unjust means.

ATTITUDES

Luckily, in recent years, certain attitudes as regards the use of wildlife species have begun to change. An obvious example of this can be seen in the case of whales or seal pups. Nowadays, even if the commercial hunting of these species were viable, it would be difficult to imagine the majority of the general public accepting it.

Furthermore, it has been shown that a respectful attitude towards these animals can be more profitable than the traditional exploitation. Japan, for example, earned 9.1 million dollars in 1992 from the observation of whales from boats, a figure four times that obtained before the moratorium on their hunting.

Whale watching has been going on for some years in Argentina, the USA, Canada, Mexico and also to a lesser extent in the Mediterranean.

Misguided Love

The lack of awareness and information regarding wildlife trade is the cause of many problems. A lot of the animals captured each year are used to satisfy the demand for more and

more exotic pets and decorative objects, such as skins, trophies, etc., or for animals used in laboratory research. In fact, most infringements of CITES are due to habits the developed countries. These habits generate a demand which can only be satisfied by captures on an outrageous scale.

The five million live birds circulating each year on the international market, the one and a half million reptiles imported into the USA as "mascots" and the more than 25 million butterflies exported each year by Taiwan for collectors illustrate the scope of the madness behind the idea that any animal, the more exotic the better, can be kept as a pet, or that anything taken from the wild to decorate our homes is a sign of good taste and of a love of nature.

This distorted viewpoint in fact shows little respect for living creatures or the natural world. What we ought to do is:

- * find out before buying an exotic animal or manufactured product whether its capture has harmed wild populations or the animal itself; whether it presents a danger or could adversely affect local ecosystems if we set it free or it escapes; or simply whether it's justifiable to deprive an animal of its freedom with the sole purpose of owning it and enclosing it in a space bearing no resemblance to its natural habitat;
- * learn about the way of life of animals and plants in the wild and set aside mistaken ideas and fancies that are harmful to them;
- * avoid the consumption of animals, plants and their derivatives which are obviously damaging to wild populations;
- * encourage ownership of traditional pets, instead of the exoticism of the new "mascots";
- * tell others about the problems involved in wildlife trade and the growth of demand;
- * refuse animals or souvenirs made from wild species on our travels. Otherwise make sure they respond to a sustainable use of resources—in other words, that they have been bred in captivity or in nurseries.

Using Resources

The preservation of biodiversity has a lot to do with trading in animals and plants. In fact, this trade is considered the second most important factor in species loss, following habitat destruction.

Gerald Durrell, the famous British naturalist and writer, once said that the key to preventing the plunder of creatures in the wild as a result of illegal trade is education. People must be taught that all elements of nature are renewable resources if used with care and not squandered. Once people learn that their natural heritage is something to be proud of and to be protected rather than frittered away for selfish, short-term gains, then the results will probably be a more sensible use of nature for the benefit of all.

Biological diversity can be maintained, amongst other things, by protecting natural habitats and preserving areas of special interest with specific conservation programmes.

The Key is Sustainable Use

Nowadays, trade in wildlife species yields a few real financial benefits for the developing countries (the chief exporters). The absence of methods of exploitation that ensure sustainable production makes this trade an essentially predatory activity in which the real killings are made by the intermediaries and the traders in the rich countries.

In 1991, for example, turnover in the tropical wood trade amounted to six thousand million dollars, with a tendency to decline. This decline was the result of the disappearance of forest masses because of this continued exploitation. Only a very small part of the tropical wood felled, 0.1%, comes from sustainable methods.

Indiscriminate exploitation of tropical forests, largescale collection of plants for use in various industries and uncontrolled commercial exploitation of shells lead to a loss of resources of wealth for Third World countries. What's more, this

system is extending environmental degradation, bringing deforestation to many parts of the planet, contributing to the disappearance of species and adding to the poverty and hardship facing local populations.

According to the WWF annual report, millions of people, especially in developing countries, depend directly on wildlife for food, medicine and energy. For them, illegal trading is an enormous problem because of the damage it causes.

The conservation of wildlife habitats and animal populations by means of suitable management programmes, combined with breeding in semi-captivity, is an essential source of income for the inhabitants of these areas.

All that is needed for the sustainable exploitation of many species is to establish areas from which animals can be periodically taken. The population is maintained in constant growth by sacrificing a reasonable number of specimens. In this way a good yield is obtained without damaging the global equilibrium of the population.

A rational use of these resources is required and it should never exceed their rate of recovery.

The success of various projects carried out by local associations and groups show that this is the only reliable form of long-term development.

- * Promote local and regional development programmes combining the defence of wildlife resources with illegitimate exploitation of species bred in farms, nurseries or semi-captivity for sustainable use.
- * Find alternatives to trade in those cases in which long-term sustainable exploitation is not viable.

Bhagavadgita has the answer for irrational acts and the measure to do away with the desire. Lord Krishna states, "He, who is able to resist the impulse of desire and wrath even before the impulse of desire develops, is a happy man" (V-23,25 & 29).

शक्नोतीहैव यः सोढुं प्राक्शरीरविमोक्षणात् ।
कामक्रोधोद्वेगं वेगं स युक्तः सं सुखी नरः ॥५.२३ ॥

"He alone who is able to stand, in this very life before casting off this body, the urges of lust and anger, is a yogi; and he alone is a happy man".
(BG V.23)

लभन्ते ब्रह्मनिर्वाणमृषयः क्षीणकल्मषाः ।
छिन्नद्वैधा यतात्मानः सर्वभूतहिते रताः ॥५.२५ ॥

"The seers whose sins have been wiped out, whose doubts have been dispelled by knowledge, whose disciplined mind is firmly established in God and who are actively engaged in the service of all beings, attain Brahma, who is all peace". (BG V.25)

भोक्तारं यज्ञतपसां सर्वलोकमहेश्वरम् ।
सुहृदं सर्वभूतानां ज्ञात्वा मां शान्तिमृच्छति ॥५.२९ ॥

"Having known Me in reality as the enjoyer of all sacrifices and austerities, the supreme Lord of all the worlds, and the disinterested friend of all beings, My devotee attains peace".
(BG V.29)

Thereby, with the sins destroyed, doubts removed, mind disciplined and more importantly delighted in the welfare of creatures and acts as a friend of all beings, attains peace and is transformed into a divine form. He now has faith in Lord's nature and his (Man's) acts are designated as environment friendly.

Therefore, human beings should behave in nature as its part and not as master, because it is the God's nature not man's. This is the divine role of the man in nature.

BHAGAVADGITA ON ECOSYSTEM

Life exists on earth in the form of plants, animals and micro-organism. These forms are so created and evolved that they are linked with each other like a chain. Further, their survival is also dependent on each other, as they form an integrated type of ecosystem. For the continuity of the ecological cycle, Lord Sri Krishna says to Arjuna in Bhagavadgita.

चातुर्वर्ण्यं मया सृष्टं गुणकर्मविभागशः ।
तस्य कर्तारमपि मां विद्ध्यकर्तारमव्ययम् ॥४.१३॥

"The four orders of society (viz., the Brāhmaṇa, the Kshatriya, the Vaishya and the Shūdras) have been created by me, classifying them according to the mode of prakṛti/nature in each and apportioning corresponding duties to them." (BG IV.13)

अव्यक्तादीनि भूतानि व्यक्तमध्यानि भारत ।
अव्यक्तनिधना-यैव तत्र का परिदेवना ॥२.२८॥

"A living being is in manifest form (in body form according to its genetic trait) only between birth and death; and in unmanifest state (disintegrated form) before birth and after death". (BG II.28)

The four orders of society according to their designated functions by the God are Brāhmaṇa—the enlightened; Vaishya the prosperous and wealthy; Kshatriya—the valourous; and Shūdra—the decomposer. Brāhmaṇa may be

denoted as plants; Vaishya as herbivores; Kshatriya as carnivores; and Shūdra as bacteria and other micro-organisms.

Brāhmaṇa as plants because in the entire type of creations, it is this group which is able to trap the solar energy with the help of chlorophyll to synthesize carbohydrates or energy forms. This act of photosynthesis is not that simple as it appears to be, as the tiny chlorophyll containing algae, herbs, shrubs and trees are enlightened enough to know the chemistry of the chloroplasts, its property to synthesize food and also be in a position to form them in their cell. It is important to note that the basic food chain starts from the plants.

Therefore, plants are called as primary producers. It is they who initiate the unmanifest into manifest forms, ie. they are able to take the raw material from the soil and assimilate them for their growing structure. The evolution, variation and divergence in plant species have acted as a central source for the animals to evolve and bring about variations in them, ultimately leading into evolution. Formation of a new type means a varied kind of food, resulting into lessening of food competition amongst the animals. Thus reducing the threat of elimination during the course of struggle for existence.

It is, therefore, the plants which can be considered as 'enlightened', with sense of sacrifice for being food for others. It is due to plants that life on earth till date exists and the ecosystem is being held. Creation of plants, is no doubt, important but to check the uncontrolled growth of plants, the herbivores are also equally important. Even the plants cannot survive and thrive if their population and density is not checked in a rational proportion, because overcrowding acts as an obstacle for the plant growth, due to the fact that there will be competition for the space and sunlight.

The Vaishya believes in business, amassing wealth in a short time and with minimum of investment. The herbivores have enjoyed the plants as food and tended to grow in number in minimum of time and efforts. The herbivores are the primary consumers. The example of the herbivores are

deer, cattle, etc. They are not fast feeders but fast breeders also. It is of common experience that if the population of the herbivores is not checked, they by overgrazing will bald any given area in a very short time.

The Kshatriya, the carnivores, by virtue of their valour, have controlled the ever growing population of the herbivores, thus saving the plants from being overexploited. The carnivores have to struggle more for food than the herbivores due to nonavailability of prey every time, therefore, this group of animals are slow breeders.

Shūdras are the most important part of the creation, as it is due to them the ecological cycle is completed and it enables the initiation of the re-cycling of the ecosystem. The Shūdras act as decomposers, thus unmanifesting the dead plants and animals. The unmanifested state acts as nutrient pool or raw material for the growing plants. Therefore, the continuity of the ecological cycle is ensured.

Therefore, for establishing and maintaining the rule of nature or the righteous functioning of the ecological cycle, and that the nature continue to work in harmony, the Lord has divided the living beings in four societies assigning them the duties according to their property and characters. But it is important that the respective strength of these classes are neither conducive to the attainment of their selfish ends nor aims at self-exaltation by relegating other to subordinate position.

Duties in nature by four orders are performed as if they are different limbs of a body, functioning according to their capacity and assigned role. This all has been done in order that one may discharge its own duty and enable others to do the same. Since duties have been properly apportioned without any idea of superiority or inferiority, balance in nature is maintained in these four orders. Built as it is on the solid foundation of division of duties on the basis of qualifications, this institution of nature is so well organised that the equilibrium of the ecological cycle is automatically maintained.

However, it is observed that the recent human activities have effected all the four grades of nature resulting in the loss of biological resources. Biological resources are degraded and lost by way of large scale of clearing of forests, overharvesting of plants and animals, indiscriminate use of pesticides, draining and filling of wetlands, destructive fishing practices, air, water and soil pollution. Conversion of wildland to agricultural and urban uses is also responsible for damaging the ecological cycle.

The increase of human population has added fuel to the fire as the growing human population places increasing demands on the natural resources and ecological processes are stressed. The green house effect and ozone depletion are the results of such human activities. Therefore, human being should ensure that the cycle is not disturbed. The conservation activities include protecting the threatened species by protecting the habitats, making conservation programmes, like zoos, seed banks, making botanical gardens and propagating the threatened and other species which are likely to be endangered. Curbs in pollution activities should be given priority. Sustainable utilization of the natural resources should be the key to follow and practise. Environmental education is the basic desideratum to bring about awareness amongst people for such conservation programmes.

ESSENTIALS FOR ENVIRONMENTAL EDUCATION

Environmental Education (EE) is a lifelong process which occurs in both planned and unstructured ways — it is, or should be, part of all aspects of learning through, and for, life:

- * Consider the total environment - natural and man-made, technological and socio-cultural (including political, historical, moral and aesthetic),
- * Be a continuous, lifelong process,
- * Be interdisciplinary in its approach and present a com-

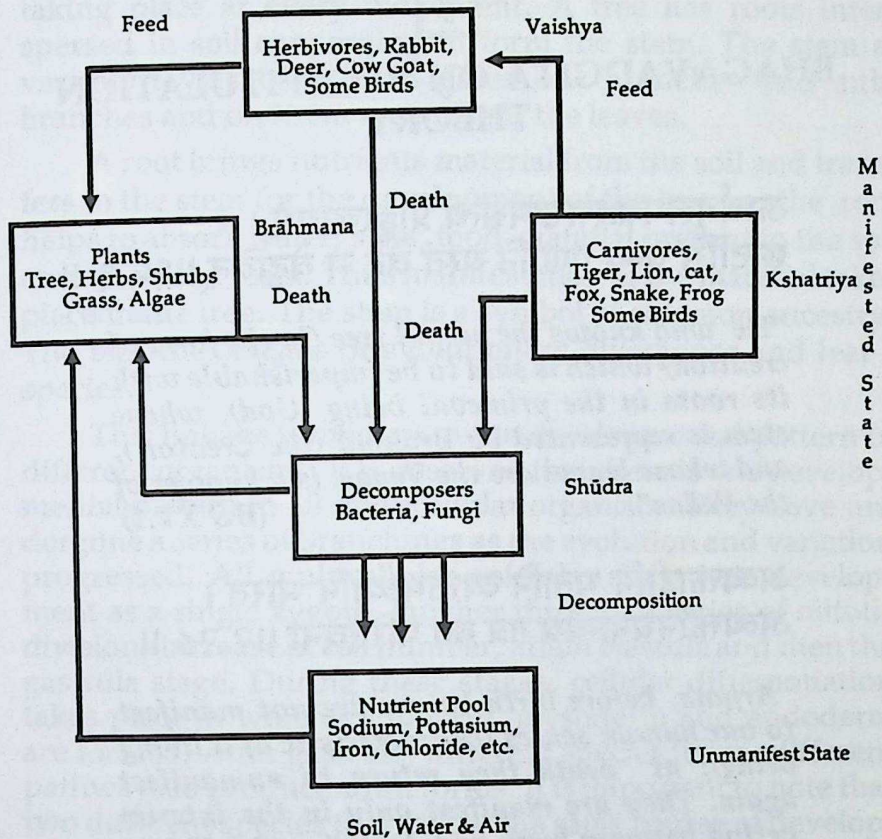
prehensive, balanced perspective,

- * Examine major environmental issues from local, national, regional and international viewpoints so that people gain global and local perspectives,
- * Focus on current and potential environmental situations and international co-operation in the prevention and solution of environmental problems,
- * Consider environmental aspects in plans for development and growth,
- * Enable learners to participate in planning their own learning experiences and provide opportunities for them to make decisions,
- * Relate environmental sensitivity, knowledge, problem-solving skills and value judgements to every age, but with special emphasis on environmental sensitivity to the learner's own community in early years,
- * Help people discover both the symptoms and the real causes of environmental problems,
- * Emphasise the complexity of environmental problems and the need to develop critical thinking and problem-solving skills,
- * Use a variety of learning environments and approaches with emphasis on practical activities and personal experience.

Man has an ethical responsibility not to tamper the ecological cycle and with the evolution of life on earth. This is a responsibility we have for other forms of life and for our progeny. They have a right to arrive at the right time and flourish in a right environment.

Bhagavadgita on Ecosystem

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Bhagavadgita and Ecosystem

BHAGAVADGITA ON RECAPITULATION THEORY

ऊर्ध्वमूलमधःशाखमश्वत्थं प्राहुरव्ययम् ।
छन्दांसि यस्य पर्णानि यस्तं वेद स वेदवित् ॥१५.१ ॥

"He who knows the peepal tree (in the form of creation) which is said to be imperishable with its roots in the primeval being (God), whose stem is represented by Brahmā (the Creator), and whose leaves are the Vedas, is a knower of the Vedas".
(BG XV.1)

अव्यक्तादीनि भूतानि व्यक्तमध्यानि भारत ।
अव्यक्तनिधनान्यैव तत्र का परिदेवना ॥२.२८ ॥

"Arjuna, before birth beings are not manifest to our human senses (characteristic of a living being); at death they return to unmanifest again. They are manifest only in the interim period between birth and death". (BG II.28)

The Lord Sri Krishna, in Bhagavadgita has compared evolution with a Banyan tree. A tree in both a symbol and entity revealing evolution of life. That life in self expressive is made to known to us by the leaves of a tree. The leaves of a tree can be termed as different species exhibiting bio-diversity. A species (living organism) has senses and through it seeks knowledge (Vedas) about the environment, the acquired knowledge enables the animal to counter or adapt itself so as to survive.

The adaptation may lead to morphological or physiological alterations in animals. All these have gradually

resulted in evolution. As a tree grows in various directions so is the case of evolution in plants and animals which is taking place at every movement. A tree has roots interspersed in soil converging to form the stem. The stem at various levels of growth gives out branches and sub-branches and on them are present the leaves.

A root brings nutrients material from the soil and transfers to the stem for the development of the tree i.e. the root helps to absorb water, salts, food material present in the soil as unmanifest form. Thus manifestation of the material takes place in the tree. The stem is a symbol of common ancestry. The branches means of evolutionary divergence and leaf a species.

This linkage is evident in the developmental pattern of different organisms. It is observed that there is one developmental pattern in all multicellular organism. They have undergone a series of branchings as the evolution and variation progressed. All multicellular animals start their development as a single zygote. Further through a series of mitotic divisions increase in cell number, attain blastula and then the gastrula stage. During these stages, cellular differentiation takes place in which endoderm, mesoderm and endoderm are formed. After gastrula, different species follow different pathways to produce adult forms. It is important to note that two different species that follow the same course of developmental pattern though be variable in line of evolution (sub-branches), originate from a common ancestor (stem and root).

According to the Recapitulation concept of Von Baer, embryo of higher animals repeat many of the stages through which embryos of lower animals have passed. In other words, some of the developmental stages of an organism are similar to some of the developmental forms of its ancestors. Ernest Hackel gave the concept of 'Biogenetic law' which states "Ontogeny recapitulates phylogeny" i.e. in its development, an individual passes through stages like the adult stage of its ancestors. Modern embryologists prefer the recapitulation concept than the Biogenetic law.

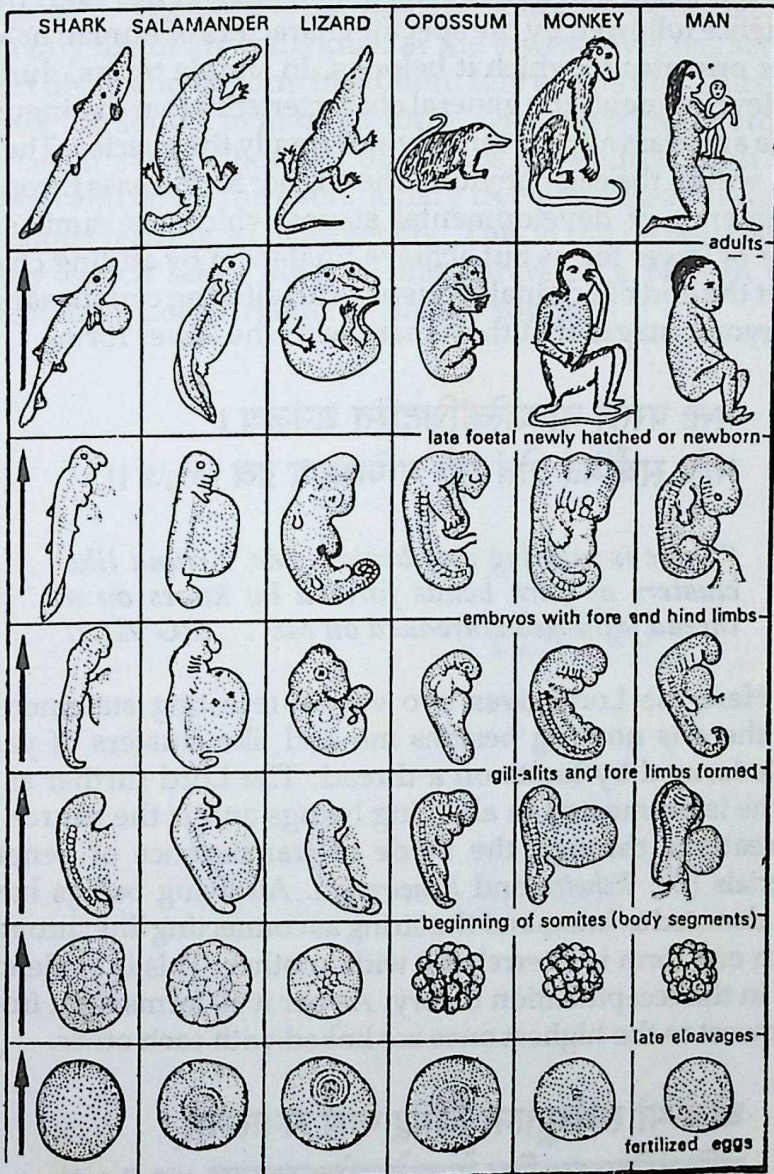
The phenomenon of recapitulation can be explained by taking the example of developmental pattern of a fish, reptile and mammal. All have their origin from a single cell i.e. the zygote. The zygote undergoes repeated divisions to form various types of cells which ultimately forms the embryo. During the early embryonic stages all embryos look alike. All have similar pharyngeal arches and clefts. At somewhat later stage in the series, the limb-bud primordia of fore and hind limbs are formed in all embryos. In a similar way they have an embryonic tail. It is interesting to note that the embryos of the lizard, chick opossum, monkey and man have strong resemblances, yet those of fish and salamander are beginning to assume recognizable forms. At this stage, gills have been formed from the tissue lining, the gill clefts of both fish and the salamander. Later in birds, each embryo develops feather in their body that indicates fairly and clearly its definitive nature. In the case of development of any mammalian embryo, the heart is four-chambered in series structure as it is in fish embryo, then it develops partition of auricle, similar to those of amphibian embryo, followed by ventricular division that is incomplete for a period, as it is in the embryo of reptiles. Thus the development of heart undergoes recapitulation from fish to mammalian form.

The genetic basis of recapitulation provides us further understanding about the common ancestry. All chordates have in common a certain number of genes which regulate the process of early development. As the mammalian ancestors evolved from fish, through amphibian and reptilian stages, they accumulated mutations for new characteristics but kept some of the original fish genes which still controls the early development.

It is interesting to note that during the course of development of human or any other mammal, the expression of genes or unfolding of genes will take place as per the course of evolution. For example, in the course of embryonic development initially the fish characters will show its expres-

Bhagavadgita on Recapitulation Theory

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Embryological development from fish to man

sion and subsequently of amphibia and reptiles. It is only after this stage that most of the mammalian genes exert their influence followed by the specific characters of human or any other primates to which it belongs. In simple terms, during the development, the general characteristics that distinguish phyla and class appear initially and finally the species. Therefore, within the each phylum, the higher forms pass through a sequence of developmental stages which are similar to those of lower forms but achieve final form by adding changes at the end of original sequence and altering certain earlier embryonic stages that they share with the lower forms.

मत्तः परतरं नान्यत्किंचिदस्ति धनंजय ।

मयि सर्वमिदं प्रोतं सूत्रे मणिगणा इव ॥७.७ ॥

"There is nothing else besides Me, Arjuna like clusters of yarn beads formed by knots on a thread, all this is threaded on Me". (BG VII.7)

Here the Lord gives two very interesting statements: that there is nothing besides me and like clusters of yarn beads formed by knots on a thread. The Lord further says that he is permeated in all living beings and is the source of all creations through the mode of transference of genetic materials (i.e. *Kshetra* and *Kshetrajña*). All living beings have been denoted as knots and the string as connecting link through which one form is interrelated with another. This is evidently clear in the recapitulation theory. As per it all forms right from the lowest to the highest ones are linked with each other.

बीजं मां सर्वभूतानां विद्धि पार्थ सनातनम् ।

बुद्धिर्बुद्धिमतामस्मि तेजस्तेजस्विनामहम् ॥७.१० ॥

"Know Me, O Pārtha, as the eternal seed of all living beings".
(BG VII.10)

The constant source is otherwise known as the eternal seed. The ocean is the eternal seed of clouds that appears and disappears. The Lord is likewise the source of all beings. He by giving life in an individual at the lowest level has set the wheel of life and its form in motion. Life begets life. Thus one form is the source of another form. One egg is the source of two celled stage, likewise, the fish is the source of an amphibian and so on the evolutionary tree progresses in varied directions leading to biodiversity. This is the recapitulation theory which takes place in the nature as a banyan tree indicated by Lord Krishna in Bhagavadgita.

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BHAGAVADGITA ON GENETICS AND BEHAVIOUR: AN ENVIRONMENTAL APPROACH

Our ancestors are present in the chromosomes of our body cells. They have reached down generation to generation through the transference of chromosomes. The chromosomes contain genes or the hereditary factors. The genes determine the behaviour of an organism. The character includes morphology, physiology and behaviour of an individual which it performs after birth. Therefore, it is important to note that there is a real correspondence between the genes and behaviour, or in other words, there is a relationship between genetic information and behaviour.

The Lord Sri Krishna in Bhagavadgita has discussed in detail about the continuity of a species, role of senses, its relation with the environment, and genetic factors leading in the formation of varied forms in the nature. The Lord states:

मम योनिर्महद्ब्रह्म तस्मिन्नार्धं दधाम्यहम् ।
संभवः सर्वभूतानां ततो भवति भारत ॥१४.३॥

*"My primordial nature known as a great
Brahma, is the womb of all creatures; in that
womb I place seed of all life. The creation of all
beings follows from the union of matter and
spirit, O Arjuna".*
(BG XIV.3)

अनपेक्षः शुचिर्दक्ष उदासीनो गतव्यथः ।
सर्वारम्भपरित्यागी यो मद्भक्तः स मे प्रियः ॥१२.१६॥

"Arjuna, whatsoever being, movable or immovable, is born, know it as emanated from the union of Kshetra (matter) and the Kshetrajña (spirit)".
(BG XII.26)

अव्यक्तादीनि भूतानि व्यक्तमध्यानि भारत ।
अव्यक्तनिधनान्येव तत्र का परिदेवना ॥२.२८ ॥

"Arjuna, before birth beings are not manifest to our human senses; at death they return to the unmanifest again. They are manifest only in the interim period between birth and death".
(BG II.28)

In these verses nature has been designated as 'Great womb'. The word 'womb' means—a place where something is engendered or developed. The Lord by giving this name to the nature tends to state that nature is the material cause of not one species but all living matter.

The nature contains both unmanifested and manifested matter. The attainment of manifested state is achieved from the unmanifested state and the disintegration of the former leads to the natural form (BG II-28). The nature provides varied environment for the benefit of living beings.

This variation in the environment triggers a sense of desire and ego to enjoy these variations. The development of ego and desire in the organisms brings about an urge to evolve those morphological and physiological adaptations so as to use the environmental factors in an optimum manner.

The progressive mechanism of variation in a living being resulting in a change with descent is known as evolution. Therefore, in nature a totality of living beings is observed manifesting in different forms, for example, lion, tiger, bird, fish, insect, man etc. These are born according to the laten-

cies of their past deeds due to the mechanism of genetic inheritance. The creatures in various subtle and astral forms are developed through the union of matter and spirit.

Life has its origin in the conjugation of the sentient and the insentient. The body bereft of life becomes a corpse and life without the instrument of body is ineffective. Therefore, the act of living ensues from the union of insentient and the sentient i.e. the Kshetrajña and Kshetra. It is the commingling of the conscious principle and unconscious matter (body). The soul and the body are the important principles of life. As life begets life, for this the spirit requires body for its dwelling (BG-VII-6).

एतद्योनीनि भूतानि सर्वाणीत्युपधारय ।
अहं कृतस्नस्य जगतः प्रभवः प्रलयस्तथा ॥७.६ ॥

वासांसि जीर्णानि यथा विहाय
नवानि गृह्णाति नरोऽपराणि ।
तथा शरीराणि विहाय जीर्णा-
न्यन्यानि संयाति नवानि देही ॥२-२२ ॥

"Moreover, as a man casts off worn out garments and puts on new ones, so is the embodied soul, casting off worn out bodies enters into other that are new."
(BG II.22)

जातस्य हि ध्रुवो मृत्युर्ध्रुवं जन्म मृतस्य च ।
तस्मादपरिहार्येऽर्थे न त्वं शोचितुमर्हसि ॥२.२७ ॥

"For death is certain to which is born and one who is dead, birth is certain". (BG II.27)

However, it is the body through the mode of reproduction, that facilitates the soul transference. Thus the successive transference of the genetic material facilitates the

continuity of life and any variation in it leads to evolution of the organism. Evolution of a species is the cumulative result of several generations. New forms are built at the cost of old ones. In this process creation, preservation and destruction are the three phases of activities going on in nature. Creation means birth from the unmanifest to manifest state and in between the two is the phase of preservation or genetic inheritance. The genetic material is transmitted or inherited from one generation to the other, it has therefore, been stated to be unborn and indestructible and uncleavable. However, this is not the case with the body, it is very different.

DIFFERENT PHASES OF LIFE

The body apart from possessing its morphological stature has senses and the property of feeling perceives heat, cold, pleasure and pain (BG-II-14).

मात्रास्पर्शास्तु कौन्तेय शीतोष्णसुखदःखदाः ।

आगमापायिनोऽनित्यास्तांस्तितिक्षस्व भारत ॥२.१४॥

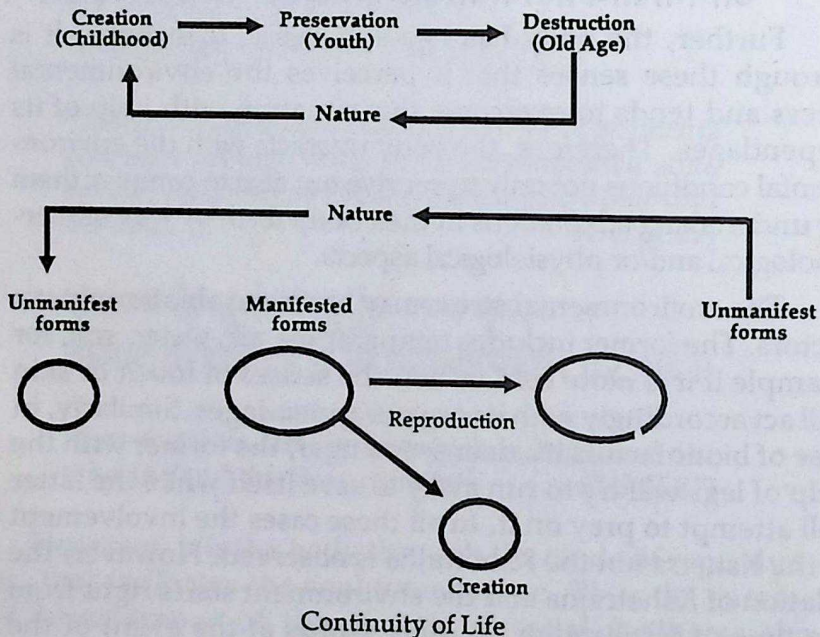
Further, the body has ego and desire to survive. It is through these senses that it perceives the environmental stress and tends to overcome this situation with help of its appendages. Therefore, the body interacts with the environmental conditions not only to survive but also to conquer them by undertaking adaptations in their body form by way of morphological and/or physiological aspects.

The environmental stress may be due to abiotic or biotic factors. The former includes temperature, air, water, soil, for example if it is more cold or hot, the senses of touch or skin will act accordingly with its organs/appendages. Similarly, in case of biotic factors if a deer sees a tiger, the former with the help of legs will try to run away to save itself while the latter will attempt to prey on it. In all these cases the involvement of the Kshetra not the Kshetrajña is observed. However, the relation of Kshetrajña and the environment starts right from the time of fertilization, in other words at the event of the

genetic material transmigrating from the preservation stage to the creation stage.

The behaviour of an individual is dependent on two points—the genetic material it has and in the environment it is present. Environment, therefore, is an important factor to provide stimulus to an organism to behave. Further, a behaviour is the result of inter-relationship between an organism and environment. This functional change developed in an individual leads to variation. Thus variation is one of the important factor that results in the evolution of a species.

To construct a house, two important things are required: an architect and the building material. An architect has a frame and design of the house as he commands the proper utilization, placing and construction material of the house as the building without proper guidance will be non-directional and without any purpose. However, an architect is of no meaning without the building material. The building is constructed from the raw material i.e. it is manifested from the



unmanifested state. The command for its construction comes from the architect. In the present context the building can be termed as Kshetra and the architect as Kshetrajña.

Similarly, for the development of any organism, two components are present, the genes and the protein. The genes are the structural and functional hereditary units. The genes occur in the chromosomes of each cell of a living organisms and are passed from one generation to the other through the mode of reproduction for the purpose of creation and preservation. The gene contain genetic information in the cell in the form of molecular code and for the regulated construction of protein. Proteins are formed by the bonding of aminoacids and are the building blocks of an organism. Genes can, therefore, be designated as an architect and protein as the building material. It is important to note that the genes do not contain protein for the development. It comes from the environment. Genes are relatively short segments of long DNA molecules in the nucleus of the cells. DNA molecules comprise linear code made up of four types of nucleotide bases- Adenine, (A), Thymine(T)/Uracil(U), Gaunine(G) and cytosine(C). Each code is in triplet form C-G-C, C-C-C,, A-T-G or any tiplet formation from these bases. The code is expressed in two steps; first the sequence of nucleotide bases is transcribed on the a single complementary strand of the messenger RNA. The second step is translation, in this case the genetic programme is read from the messenger RNA in codons. Four RNA bases of A-U-G-C form 64 codons ($4 \times 4 \times 4$), i.e. they are involved in protein synthesis by linking various amino acids to form specific proteins as required by the animals and plants. This code is universal; all bacterium to man use the same 20 amino acids. These amino acids combine to form larger molecules of various kinds, known as protein, which in turn determine the essential characters of the organism.

The environmental stress causes in the transcription and translation of the coded messages in the genes, resulting in

the reshuffling of genes, deletion or duplication of the chromosomes. All these occur randomly and result in hereditary variations if they take place in the genetic material. These variations are raw material or alternate solutions for solving the problems of environment. Since these random variations in the genetic material occur independently in each individual, as a result of this, individuals differ in their solutions to the similar problems provided by the environment. Those possessing genes for a problem survive and reproduce, thus can be termed as naturally selected. This is the process of biological selection. This has led to evolution. The animals live in same environment but have solved them in their own manner.

इदं शरीरं कौन्तेय क्षेत्रमित्यभिधीयते ।

एतद्यो वेत्ति तं प्राहुः क्षेत्रज्ञ इति तद्विदः ॥१३.१॥

The mechanism of genetic variation, role of senses and evolution can best be explained by the Darwin finches which happened to land at the Galapagos islands. At this place, the birds for their survival adapted successfully in the dietary divergence by following the mode, Jñānayoga and Karma yoga (BG III.3), i.e., path of knowledge and path of action; application of senses (BG XV-9) and Kshetra and Kshetrajña (BG XIII-1).

"Galapagos islands are situated far from the mainland of South America. Few species of the finches happened to arrive in the island and established there. The seedling eating birds when arrived, there was undoubtedly an abundance of food of different kinds and few competing species. However, with the congenial environment their number grew very fast and the availability of food became scarcer, resulting in the competition for food i.e., the initiation for the struggle for existence.

To avoid this, these birds devised a new method by switching over to other types of food available there

(*Jñānayoga* and *Karmayoga*). Some thought of leaves and fruits, some insects and buds, and some insects and seeds etc., the birds started working on this direction through the help of their sense and action or by using their body accordingly (BG III.3 and XV.9).

लोकेऽस्मिन्द्विविधा निष्ठा पुरा प्रोक्ता मयानघ ।
ज्ञानयोगेन सांख्यानां कर्मयोगेन योगिनाम् ॥३.३॥

श्रोत्रं चक्षुः स्पर्शनं च रसनं घ्राणमेव च ।
अधिष्ठाय मनश्चायं विषयानुपसेवते ॥१५.९॥

Gradually the morphology of their beak changed and thus the speciation progressed, the finches were filled one by one with newer species diverging more strongly from the ancestral seed eating founders.

Thus, it is observed that these drab sparrow like birds feed on every thing from tiny insects to huge thick hulled seeds. There are ground feeding seed eaters with powerful crushing beaks, cactus consumers with beaks adapted for probing and slicing, tree-buds and leaf eaters with cutting beaks, and insect eaters with delicate forcep like bills. When more than one of these species exploits the same category of food, as in the case of seed eating ground finches, their beaks are specialized for one component of the total resource (eg. large, medium, and small seeds respectively).

However, all this which appears to be simple, but it does not take place in one generation. It is the result of numerous generations and the successors working with an aim to acquire the desired morphological or physiological adaptations.

यस्त्विन्द्रियाणि मनसा नियम्यारभतेऽर्जुन ।
कर्मेन्द्रियैः कर्मयोगमसक्तः स विशिष्यते ॥३.७॥

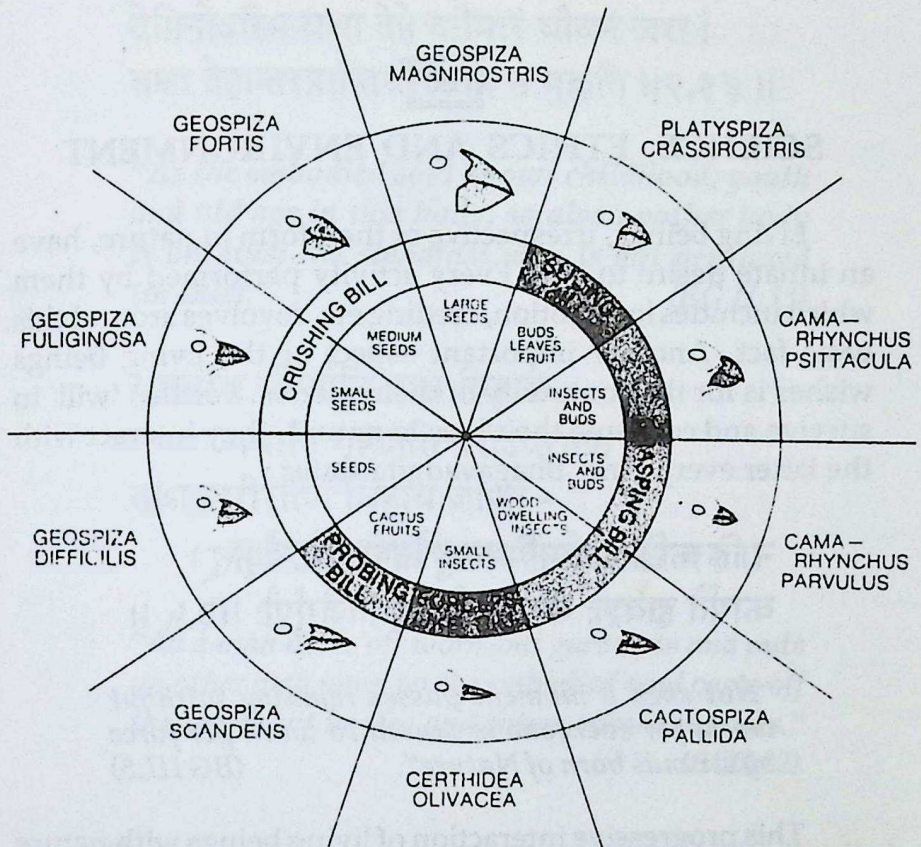
नियतं कुरु कर्म त्वं कर्म ज्यायो ह्यकर्मणः ।
शरीरयात्रापि च ते न प्रसिद्ध्येदकर्मणः ॥३.८॥

सहयज्ञाः प्रजाः सृष्ट्वा पुरोवाच प्रजापतिः ।
अनेन प्रसविष्यध्वमेष वोऽस्त्विष्टकामधुक् ॥३.१०॥

This is only possible as the Lord puts it very aptly:

"With the object clear in mind, controlling the organs of sense and action by the power of will and remaining unattached, undertake the path of action through these organs (BG-III-7), performs his allotted duty efficiently (BG-III-8), you shall prosper by this; may this yield the enjoyment you seek." (BG III.10)

This is the key for evolution attained through the mechanism of genetics, in this involment of senses of perception and appendages of action are essential. With all these characteristics attained in an individual it survives and thrives by manifesting in its behaviour.



Adaptive Radiation in bill shape and diet that has taken place during the evolution of Darwin's finches

SCIENCE, ETHICS AND ENVIRONMENT

Living beings, irrespective of their form in nature, have an innate desire to live. Every activity performed by them which includes locomotion, feeding etc. revolves around this basic fact. Another important aspect of the living beings wishes is for the continuity of their species. For this 'will' to survive and continue their race in nature, they interact with the latter every time. Bhagavadgita states :

न हि कश्चित्क्षणमपि जातु तिष्ठत्यकर्मकृत् ।
कार्यते ह्यवशः कर्म सर्वः प्रकृतिजैर्गुणैः ॥३.५ ॥

"Not even a moment passes remaining without work; for everyone is caused to work per force by strands born of Nature". (BG III.5)

This progressive interaction of living beings with nature leads to their evolution and also results in biodiversity, however, if the interaction is towards the retrogressive side then there is a possibility of extinction or their very existence may be threatened.

It has to be admitted that nature is an extensive slaughter house. Relentlessly it wipes out the unwanted ones. Darwin stated that it is only the "Survival of the fittest" which exists in nature. Further, a weakling has no place in nature. There is Science and Art in this act of Nature. Creation, preservation and destruction are the phases of ceaseless activity going on in nature. New forms of life are built at the cost of old ones. The birth into a new body is putting an end to old worn out body.

देहिनोऽस्मिन्यथा देहे कौमारं यौवनं जरा ।
तथा देहान्तरप्राप्तिर्धीरस्तत्र न मुह्यति ॥२.१३॥

"As the embodied soul knows childhood, youth and old age in this body, so also another body it obtains; the steadfast man is not perplexed (in this)."
(BG II.13)

वासांसि जीर्णानि यथा विहाय
नवानि गृह्णति नरोऽपराणि ।
तथा शरीराणि विहाय जीर्णा -
न्यन्यानि संयाति नवानि देही ॥२.२२॥

"As a man casts off worn-out garments and puts on other new ones, so the embodied soul casts off the worn-out bodies and enters other new ones."
(BG II.22)

The interval between creation and destruction is called preservation. As the sides of a triangle are interdependant, these triple activities are inter-related. It has to be borne in mind - "death is unavoidable" and any attempt to avoid it will be futile. "Having attained life" Gita exhorts :

नियतं कुरु कर्म त्वं कर्म ज्यायो ह्यकर्मणः ।
शरीरयात्रापि च ते न प्रसिद्ध्येदकर्मणः ॥३.८॥

"Do thou thy allotted work. (For) work is better than inaction, even the sustenance of thy body cannot be accomplished from inaction." (BG III.8)

यज्ञार्थात्कर्मणोऽन्यत्र लोकोऽयं कर्मबन्धनः ।
तदर्थं कर्म कौन्तेय मुक्तसङ्गः समाचर ॥३.९॥

"Save where work is for sacrifice, this world is chained by bonds of work; do thy work to this end being free from attachment." (BG III.9)

There is perhaps, a consensus among all of us that science and technology have played an important role in improving the quality of mankind. However, it is also conceded that they have also contributed to the deterioration of the social and natural environment due to the extensive and irrational utilization of the natural resources.

The most serious problem our society is facing includes population, pollution, poverty and proliferation of weapons of mass destruction. However, this does not mean that there is no further requirement for science and technology, what is urgently needed is that they must be utilized constructively and ethically. In it the environmental education has to play an important role. The basis of education should have (4 C's) curiosity, creativity, competence and compassion. There can be no science without curiosity, no technology without creativity and no production without competence. But without compassion, they may be used to destroy the environment and life on earth.

All species have an inherent right to exist. It has to be borne in mind that every form of life is unique warranting respect, regardless of its worth to man and to accord other organisms such recognition man must be guided by a moral code of action. Further, humanity is a part of nature, and humans are subject to same immutable ecological laws as all other species on the planet. All life depends on the uninterrupted functioning of natural systems that ensure the supply of energy and nutrients, so ecological responsibilities among all people are necessary for the survival, security of the world community.

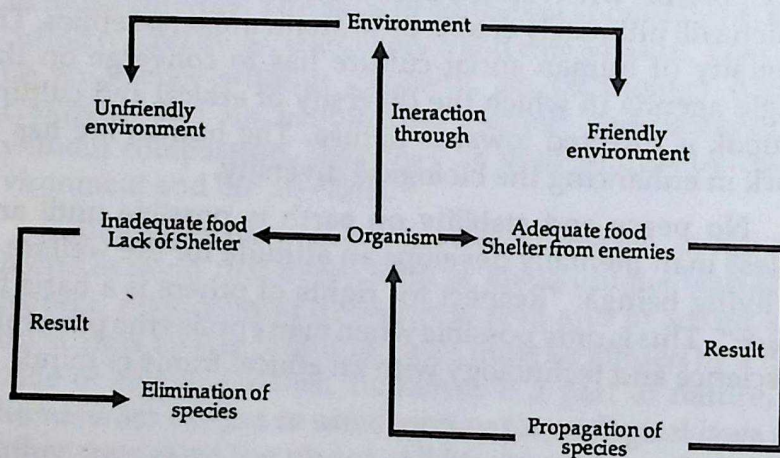
Thus, man must fully recognize the urgency of maintaining the stability and quality of nature and conserving the natural resources. The ecological process that support the integrity of the biosphere and its diverse species, landscapes and habitats are to be maintained. Hence, sustainability is the basic principle of all social and economic development. Personal and social values should be chosen to essentuate the richness of flora and fauna.

The respect and affection of all living beings is possible by environmental ethics. This moral foundation will enable many utilitarian values of nature - for food, health, science, technology, industry etc., to be equitably distributed and sustained for future generations. It is worth bearing in mind that the well-being of future generations is a social responsibility of the present generation. It is only possible if the present generation limits its basic needs in order to ensure that renewable resources are nurtured for their sustainable productivity. This responsibility lies not on one individual, society or nation but on the entire global community. This is only possible when basic ethics is intuited in human culture, which will ultimately enable us to attain universal ethics. The diversity of human social culture has to converge on this single agenda in which the diversity of ethical and cultural outlook is directed towards nature. The human life has to work in enhancing the biological diversity.

No peace and stability on earth is possible until and unless man mentally develops an attitude for the welfare of all living beings. "Respect for rights of others is a basis for peace". This is only possible when man applies the principles of science and technology with an ethical frame of mind.

BHAGAVADGITA ON THE ROLE OF GENES AND ENVIRONMENT IN DIVERSITY OF BEHAVIOUR

An organism exists in the environment that is sometimes friendly, sometimes inimical and seldom neutral. An environment is friendly if it contains food for nourishment, a mate for propagation of the species, and shelter from enemies. An environment is unfriendly if it leads to the weakening or elimination of the organism or of the species. Therefore, the organism must be constantly informed of the nature of its environment in order that it may go deeper into the friendly area or withdraw from an unfriendly one. The information is supplied to organism by its sense organs and it responds accordingly with its appendages.



Relationship between an organism and environment

The Lord Sri Krishna in the very initial part of his discourse with Arjuna, the representative of mankind for the eternal knowledge in Bhagavadgita, has mentioned about the interaction between senses and the environment.

मात्रास्पर्शास्तु कौन्तेय शीतोष्णसुखदुःखदाः ।
आगमापायिनोऽनित्यास्तांस्तितिक्षस्व भारत ॥२.१४ ॥

"O son of Kunti, the contacts between the senses and their objects, which give rise to the feeling of heat and cold, pleasure and pain etc., are transitory and fleeting, therefore, O Arjuna, ignore them". (BG II.14)

The Lord has significantly divided this verse into the following parts:

- (i) An organism makes contact with the environment (objects) through senses.
- (ii) The animal feels and analyses about the favourable and unfavourable environment.
- (iii) All these feelings are transitory, indicates that either the animal is able to acclimatize them and/or the environment is fluctuating.

Acclimatization by the animal means that it is able to adjust/adapt to the adverse situation and now the very different environment appears to be congenial to it. Further, through this verse the Lord also indicates that environment too is never the same and it undergoes 'a change'.

Thus there is correlation between a living organism and the environment and the former interacts with the latter for its survival by adaptation or change in behaviour.

सद्यं चेष्टते स्वस्याः प्रकृतेर्ज्ञानवानपि ।
प्रकृतिं यान्ति भूतानि निग्रहः किं करिष्यति ॥३.३३ ॥

"All living creatures follow their tendencies; even the wiseman acts according to the tendencies of his own nature." (BG III.33)

तत्त्ववित्तु महाबाहो गुणकर्मविभागयोः ।
गुणा गुणेषु वर्तन्त इति मत्वा न सज्जते ॥३.२८॥

"He however, who has true insight into the respective spheres of the Guṇas (in the shape of objects of perception) and their actions, holding that it is the Guṇas (in the shape of senses & mind etc.) that moves among the Guṇas (objects of perception) does not get attached to them, Arjuna". (BG III.28)

न हि कश्चित्क्षणमपि जातु तिष्ठत्यकर्मकृत् ।
कार्यते ह्यवशः कर्म सर्वः प्रकृतिजैर्गुणैः ॥३.५॥

"Surely none can ever be inactive even for a moment; for everyone is helplessly driven to action by nature born qualities". (BG III.5)

In this verse 'action' and 'helplessly driven to nature borne qualities' denote that a living being is bound to perform various life activities according to his nature born qualities i.e. according to its genetic inheritance. All activities of the body and senses and its interaction with the environment such as movement, rest, satisfaction of hunger, locomotion and reproduction and reflexes i.e. a man, frog or lion will act under the impulse of respective nature which are formed out by the latencies of deeds performed by their respective ancestors.

प्रकृतेः क्रियमाणानि गुणैः कर्माणि सर्वशः ।
अहंकारविमूढात्मा कर्ताहमिति मन्यते ॥३.२७॥

"All actions are performed by the modes of Prakriti (Primordial matter). The fool, whose mind is deluded by egoism, thinks — I am the doer".
(BG-III.27)

A living being is an embodiment of his own nature. In the environment, so as to survive, all living beings follow their own tendencies. The word 'Prakriti'/Nature denotes the distinctive nature of an individual representing the sum total of tendencies stored up and passed to the predecessors. As it is well known that life is a continuous process, further, life in the body and senses, is not an end in itself. It is only a passing phase. The interaction between environment and senses of an individual has played an important role in evolution. The former is never static, so the latter interacts with it and evolves the body accordingly. Thus a relationship exists between nature and nurture.

Genes are supposed to control the details of behavioural development. Different animals develop different behavioural abilities. The behaviour has been broadly classified into instincts (innate) and learning. Innate behaviour is said to be genetically determined and learned behaviour to be environmentally determined. Therefore, a trait may be a result of the interaction between nature (hereditary factors) and nurture (environment). These two without each other are meaningless. A genotype without environmental building blocks (nature) would remain a genotype and nothing more. Environmentally supplied materials, in the absence of genetic information (nature) to organize their use in development, would remain unorganised collection of molecules. The development of every aspect of an individual—its appearance, its physiological mechanisms, its behaviour, its everything—is the product of an interaction between hereditary information and the environment that provides the substance for development. Thus the behavioural diversity has evolved because of variety of environmental problems encountered by animal species.

The behaviour is traditionally categorised into—instincts and learning.

Instincts have a number of striking characteristics.

- (i) They are supposed to be practiced by an entire species or some large fraction of the population. For example, all males of the fruit fly *Drosophila melanogaster* vibrate their wings when courting a female in much the same manner, producing a complex species—characteristic pattern of sound waves.
- (ii) Innate behaviour appear to be released by relatively simple stimuli. The mechanical relationship between a complex behavioural pattern and simple cue is best demonstrated by watching an animal in an unusual setting where its innate response is totally inappropriate and totally unintelligent. For example, if a baby bird is banded with a shiny ring while it is in the nest, the parents will sometimes treat the band as if it were a piece of faecal matter, a substance that is always removed from the nest and dropped some distance away. An adult bird may pull vigorously at the ring despite the fact that its offspring's leg is attached to the band and despite the cries of distress from the nestling.

These examples are a sort of 'unintelligent' automatic behaviour. The interesting point to note here is that the animals helplessly behave in nature according to their latencies provided by their ancestors.

न हि कश्चित्क्षणमपि जातु तिष्ठत्यकर्मकृत् ।
कार्यते ह्यवशः कर्म सर्वः प्रकृतिजैर्गुणैः ॥३.५॥

"Surely none can ever remain inactive even for a moment; for everyone is helplessly driven to action by nature born qualities". (BG III.5)

For this mechanism of innate behaviour or "helplessly driven to action by nature born qualities" it is proposed that the nervous system of animals must have special units responsible for the detection of neural messages generated by sign stimuli. The Innate Releasing Mechanism (IRM) would, upon receipt of appropriate signal, activate a battery of motorcells, and so turn on a behavioural response or 'Fixed Action Pattern' (FAP). However, it has now been proposed that there are physiological mechanisms that resemble IRM and FAP.

The essential property of an innate behaviour or FAP is that the response is performed in a completely functional manner, the first time an animal of a certain age and motivational state encounters the correct sign stimulus.

A beautiful example of this point is the reaction of a mature female herring gull to herring gull egg. The stimuli associated with an egg will release feeding behaviour if the female is not breeding and not incubating egg herself or if the egg is located well outside her own nest. The same egg will release incubation behaviour if it is in her nest clutch for some time or has had to leave her because of a disturbance in the colony. The female 'knows' when and how to incubate her eggs properly the first time. She settles down on her clutch. The same egg will release retrieval behaviour in which it is rolled back into her nest, if it lies just outside the female's own nest (having been pushed there during a hasty departure or having being placed by a man for the sake of doing this experiment). Again the female uses a functional retrieval response the first time she encounters her egg just outside her nest.

An adaptive change in behaviour is observed in the animals which it attains through the mode of experience. This is defined as Learning behaviour or knowledge acquired after overcoming ignorance.

The following is an interesting example:

"If a baby toad encounters a tiny moving bug for the first

time after losing its tadpole tail and hopping out onto land, it will be able to perform the stereotyped prey-capture behaviour of the species. It may orient toward the object, open its mouth, flip out its tongue, strike the prey, withdraw the tongue and the creature struck to it, and finally swallow its food. Some would argue that this is innate response to a certain class of stimuli.

If the toad is taken to the laboratory after having matured further, it can be offered various insects under controlled conditions. A hungry co-operative toad will go through the routine of snapping flies, mealworms, and other edible creatures presented to it. If the experimenter, then places a toxic millipede in the amphibian's enclosure, the toad may take this bait as well. The millipede responds by exuding a violently nauseating substance from the pores of its body, whereupon the toad will spit and push the prey from its mouth. Later, this toad will refuse to attack this millipede species even though it is hungry and will take edible insects avidly."

Its behaviour has changed. The change endures and is adaptive. The animal has learnt to avoid after having tasted just once. The toad can also learn with equal facility not to attack other dangerous prey like honeybees etc. However, the toad captures and feeds on insects (innate behaviour) and avoid the toxic ones (learned behaviour).

The acquired aversion of toad to millipede is just an example of an innate versus learned behaviour. It is worth noting that innate behaviour can be said to be innate or unlearned or ignorant until and unless it had the facility for learning. The learning material comes from the environment. The animal can be termed as innate or unlearned till he has encountered the object/stimulus available from the environment. No development of behaviour will take place if the animal is deprived from the environmental stimulus.

Thus, it is possible that some environmental variable would influence the development of the behaviour. A learned

behaviour is achieved over innate behaviour. This proposes that innate behaviour is genetically determined and learned behaviour is environmentally determined. This signifies that nature and nurture are both important for the development of a behaviour.

श्रेयान्द्रव्यमयाद्यज्ञाज्ज्ञानयज्ञः परंतप ।

सर्वं कर्माखिलं पार्थ ज्ञाने परिसमाप्यते ॥४.३३॥

"Arjuna, sacrifice through knowledge is superior to sacrifice performed with material things. For all actions without exception culminate in knowledge."
(BG IV.33)

The Lord in the verse has very beautifully explained knowledge, action and sacrifice. He has compared between action for material possession and action for attaining knowledge. For example, A man lives and acts to acquire enormous wealth and material possessions. It is important to note that material things cannot be made to use more than the requirement. Over possession fosters care and anxiety. He who gives himself over too much to mammon pays the penalty in the form of being lop-sided or stunted in intelligence. Sacrifice for knowledge on the other hand develops into wisdom. The Lord declares that all sacrifice practices are born of actions (BG IV -32). All actions require some sacrifice in the form of practice and it culminates into knowledge. Knowledge through sacrifice in which a mode of action has been involved provides a power of discrimination to an animal.

नादत्ते कस्यचित्पापं न चैव सुकृतं विभुः ।

अज्ञानेनावेतं ज्ञानं तेन मुह्यन्ति जन्तवः ॥५.१५॥

"The knowledge is enveloped in ignorance".
(BG V.15)

न हि ज्ञानेन सदृशं पवित्रमिह विद्यते ।
तत्स्वयं योगसंसिद्धिः कालेनात्मनि विन्दति ॥४.३८॥

"On earth there is no purifier as great as knowledge, he who has attained purity of heart through a prolonged practice of Karmayoga automatically sees the light of Truth in Self in course of time".
(BG IV.38)

The Lord says, " The Yoga of Knowledge and Yoga of Action both lead to Supreme bliss. Of the two, however, the Yoga of Action is superior to Yoga of Knowledge." The significance of learning/knowledge indicates that knowing on individual has less problems in life or countering the environment than the ignorant one. It is knowledge that intuitively senses for furtherance of action and modify, if necessary. The knowledge of the environment cannot be gained by senses, or intellect etc. alone. This can only be known when it acts in nature and interacts with the object. It is this then only the animal can discriminate between desirable or undesirable factors.

The Lord also states that it is through the Discipline of Knowledge (*Jñānayoga*) that an individual attains knowledge about its surrounding but a keen observance in it reveals that it has gained through 'Discipline of Action'. Further, it is through practice that brings perfection in the individual. Thus the Lord exhorts that one of the important factor for learning is through the 'Discipline of Action' acquired by the Discipline of Knowledge'.

'Practice makes a man perfect' is a saying and this is true for all living organisms. In it the knowledge acts as a purifier. Practice and knowledge provide fruit or goal to an individual. The practice/action are regarded as purifying only because they are helpful in revelation of knowledge. As ignorance is the root cause for any problem, it is through the

action that an organism comes to realise the truth about its true nature, requirement and ability to survive in the environmental stress or conditions. 'On earth' this verse refers to this nature, and the product of nature or all that exists in nature acts as substratum for the process of knowledge. Having attained knowledge through the act of *Karmayoga* and in due course of time provide perfection. Thus an animal sees the 'truth in the self'. Truth in the self means that the moment his practice reaches culmination, the light of truth dawns to the senses of the animal.

Therefore, the Lord declares that all sacrifices are born of action. Sacrifice here means to make an attempt, to devote time and energy to know more and to remove ignorance. He states that all actions culminate in knowledge. Knowledge as sacrifice stands for the process of acquiring the power of discrimination. Further, a careful study indicates that all knowledge is attained through the mode of action indicating a correlation between the senses and body.

योगसंन्यस्तकर्माणं ज्ञानसंछिन्नसंशयम् ।

आत्मवन्तं न कर्माणि निबध्नन्ति धनंजय ॥४.४१॥

"Arjuna, actions do not bind him who has dedicated all his actions to God according to the spirit of Karmayoga, whose doubts have been torn to shreds by wisdom and who is self-possessed."

(BG IV.41)

The Lord here says that nature is infallible. There is a divine plan and purpose in its functioning. It provides varied types of stimulus to living beings stage by stage which helps the latter to a state of perfection. He who understands this does not fall prey to doubt but he who applies himself with all earnestness to selffulfilment in tune with the Cosmic Plan. This wholesome attitude and right application develops into

enlightenment. The enlightened individual has the power of discrimination, modify its behaviour or take a rationale approach.

ज्ञानेन तु तदज्ञानं येषां नाशितमात्मनः ।
तेषामादित्यवज्ज्ञानं प्रकाशयति तत्परम् ॥५.१६ ॥

"Shining like the Sun, Knowledge reveals the Supreme in them, in whom ignorance is destroyed by self knowledge". (BG V.16)

Darkness vanishes when the sun rises, similarly ignorance ceases to be with the dawn of knowledge. An animal through the mode of practice or action in nature is able to attain knowledge. The attainment of knowledge in the present context is that *Bufo* is able to know about toxic millipede and modify its innate response and avoid this behaviour. In other words, a living organism who has attained real knowledge would never and in no circumstances fall a victim to delusion or be exterminated in nature. It will continue to evolve, through the interaction of Nature and Nurture.

BHAGAVADGITA ON NATURE CONSERVATION

Ever since the creation of nature, there has been a growing tendency to interfere, in self-interest, obviously a manifestation of the 'devilish' nature of mankind - with its (nature's) natural functioning, posing a serious problem of ecological imbalance. This has led the altruistically inspired people, all over the world, to voice their concern about the matter and to do or get done such things as may help in getting rid of the impending disastrous consequences. The result of the efforts so far made in respect of rectifying the situation still leaves much to be desired.

Hereunder is an outline of the solution, as indicated in the Bhagavadgita, to the problem referred to above, the order of the relevant scriptural "slokas", (in paraphrased English rendering) being modified to provide a systematic framework. Concisely, the Bhagavadgita is one of the greatest scripture of the Hindus which sets forth a way of life and a view of reality, acceptable to us all, who are students of reason and science. It is neither old nor new, it is eternal. It is a version of the perennial eternal law. It describes to us the glory of the gospel of the Gita delivered by Sri Krishna to Arjuna, a close companion, the representative man and the chosen instrument of the Lord. It articulates Supreme Knowledge for the benefit of human beings. It lays stress upon the need for co-ordination between theory and practice and discusses various factors governing nature and its cycle.

CREATION OF NATURE

Śloka/Verse

सर्वभूतानि कौन्तेय प्रकृतिं यान्ति मामिकाम् ।
कल्पक्षये पुनस्तानि कल्पादौ विसृजाम्यहम् ॥९.७॥

प्रकृतिं स्वामवष्टम्य विसृजामि पुनः पुनः ।
भूतग्राममिमं कृत्स्नमवशं प्रकृतेर्वशात् ॥९.८॥

"O Arjuna! All beings go to the Nature created by me. I create again and again restoring to Nature of mine, the entire mass of these beings are created without their will, by the power of Nature". (BG IX.7&8)

मयाध्यक्षेण प्रकृतिः सूयते सचराचरम् ।
हेतुनानेन कौन्तेय जगद्विपरिवर्तते ॥९.१०॥

"Under my surveillance, Nature gives birth to the moving (animate) and not moving (inanimate), by reason of this, the world turns round". (BG IX.10)

अवजानन्ति मां मूढा मानुषीं तनुमाश्रितम् ।
परं भवमजानन्तो मम भूतमहेश्वरम् ॥९.११॥

"As I am taking refuge in human body, fools disregard me not knowing my higher Nature as the Great Lords of beings". (BG IX.11)

अहं सर्वस्य प्रभवो मत्तः सर्वं प्रवर्तते ।
इति मत्वा भजन्ते मां बुधा भावसमन्विताः ॥१०.८॥

"I am the origin of all, from me issue all. The wise worship me knowing this, filled with love". (BG X.8)

अहमात्मा गुडाकेश सर्वभूताशयस्थितः ।
अहमादिश्च मध्यं च भूतानामन्त एव च ॥१०.२०॥

"I am the Soul seated in the heart of all beings; I, the Beginning, Middle and likewise the End of beings". (BG X.20)

यश्चापि सर्वभूतानां बीजं तदहमर्जुन ।
न तदस्ति विना यत्स्यान्मया भूतं चराचरम् ॥१०.३९॥

"O Arjuna, which is the seen of every being, am I; nor without me there exists anything moving or not moving". (BG X.39)

अथवा बहूनैतेन किं ज्ञातेन तवार्जुन ।
विष्टभ्याहमिदं कृत्स्नमेकांशेन स्थितो जगत् ॥१०.४२॥

"Or what is it to you by knowing this lesson, O Arjuna! I support this entire universe pervading it with one part of myself". (BG X.42)

PERFORMANCE OF ALLOTTED WORK

न हि कश्चित्क्षणमपि जातु तिष्ठत्यकर्मकृत् ।
कार्यते ह्यवशः कर्म सर्वः प्रकृतिजैर्गुणैः ॥३.५॥

"Not even a moment passes remaining without work; for everyone is caused to work per force by strands born of Nature". (BG III.5)

कर्मेन्द्रियाणि संयम्य य आस्ते मनसा स्मरन् ।

इन्द्रियार्थान्विमूढात्मा मिथ्याचारः स उच्यते ॥३.६॥

"He who sits restraining the organs of action, but with mind remembering the objects of senses, he is called bemused and a hypocrite". (BG III.6)

यस्त्विन्द्रियाणि मनसा नियम्यारभतेऽर्जुन ।
कर्मैन्द्रियैः कर्मयोगमसक्तः स विशिष्यते ॥३.७॥

"But he who checks the senses with the mind, and undertakes the path of the work, free from attachment, is highly esteemed, O Arjuna". (BG III.7)

नियतं कुरु कर्म त्वं कर्म ज्यायो ह्यकर्मणः ।
शरीरयात्रापि च ते न प्रसिद्ध्येदकर्मणः ॥३.८॥

"Do thou thine allotted work, (for) work is better than inaction, even the sustenance of thy body cannot be accomplished from inaction". (BG III.8)

यज्ञार्थात्कर्मणोऽन्यत्र लोकोऽयं कर्मबन्धनः ।
तदर्थं कर्म कौन्तेय मुक्तसङ्गः समाचर ॥३.९॥

"Save where work is for sacrifice, this world is chained by bonds of work; O son of Kunti ! do thy work to this end being free from attachment". (BG III.9)

देवान्भावयतानेन ते देवा भावयन्तु वः ।
परस्परं भावयन्तः श्रेयः परमवाप्स्यथ ॥३.११॥

"Support the Gods by this, and let these Gods support you. Thus shall you obtain the supreme good by mutual support". (BG III.11)

न कर्तृत्वं न कर्माणि लोकस्य सृजति प्रभुः ।
न कर्मफलसंयोगं स्वभावस्तु प्रवर्तते ॥५.१४ ॥

"That Lord neither creates power of work nor works for the world, nor for union of the fruit of works; Nature alone works out (there)". (BG V.14)

शक्नोतीहैव यः सोढुं प्राक्शरीरविमोक्षणात् ।
कामक्रोधोद्भवं वेगं स युक्तः स सुखी नरः ॥५.२३ ॥

"He who is able to resist even here, before deliverance from the body, the impulse born of desire and wrath, he is controlled and is a happy man". (BG V.23)

CONTINUITY OF LIFE

अशोच्यानन्वशोचस्त्वं प्रज्ञावादांश्च भाषसे ।
गतासूनगतासूंश्च नानुशोचन्ति पण्डिताः ॥२.११ ॥

"Thou hast grieved for those for whom no grief should be; yet thou speakest words of wisdom. For the living or for the dead the wise do not grieve". (BG II.11)

न त्वेवाहं जातु नासं न त्वं नेमे जनाधिपाः ।
न चैव न भविष्यामः सर्वे वयमतः परम् ॥२.१२ ॥

"But I was never non-existent, nor thou, nor these rulers of men, nor shall any one of us cease to be hereafter". (BG II.12)

देहिनोऽस्मिन्यथा देहे कौमारं यौवनं जरा ।
तथा देहान्तरप्राप्तिर्धीरस्तत्र न मुह्यति ॥२.१३ ॥

"As the embodied soul knows the childhood, youth and old age in this body, so also another body it obtains; the steadfast man is not perplexed (in this)". (BG II.13)

वासांसि जीर्णानि यथा विहाय
नवानि गृह्णति नरोऽपराणि ।
तथा शरीराणि विहाय जीर्णा-
न्यन्यानि संयाति नवानि देही ॥२-२२ ॥

"As a man casts off worn-out garments and puts on other new ones, so the embodied soul casts off the worn-out bodies and enters the new ones." (BG II.22)

ATTAINMENT OF PERFECTION

ईश्वरः सर्वभूतानां हृद्देशेऽर्जुन तिष्ठति ।
भ्रामयन्सर्वभूतानि यन्त्रारूढानि मायया ॥१८.६१ ॥

"The Lord abides in the heart of all creatures, and by his delusive power spins round all beings set on machine". (BG XVIII.61)

न तदस्ति पृथिव्यां वा दिवि देवेषु चा पुनः ।
सत्त्वं प्रकृतिर्जैर्मुक्तं यदेभिः स्यात्त्रिभिर्गुणैः ॥१८.४० ॥

"Not is there a creature on earth, in heaven and again among Gods, which is free from doing his assigned job in nature" (BG XVIII-40)

स्वे स्वे कर्मण्यभिरतः संसिद्धिं लभते नरः ।
स्वकर्मनिरतः सिद्धिं यथा विन्दति तच्छृणु ॥१८.४५ ॥

"Man wins perfection (when) each to his own duty

is devoted; how one attains perfection when devoted to his own duty listen to that". (BG XVIII.45)

यतः प्रवृत्तिर्भूतानां येन सर्वमिदं ततम् ।
स्वकर्मणा तमभ्यर्च्य सिद्धिं विन्दति मानवः ॥१८.४६॥

"From whom is the forthcoming of beings, by whom all this is pervaded, worshipping Him by doing his own work, a man attains perfection". (BG XVIII.46)

श्रेयान्स्वधर्मो विगुणः परधर्मात्स्वनुष्ठितात् ।
स्वभावनियतं कर्म कुर्वन्नाप्नोति किल्बिषम् ॥१८.४७॥

"Better indeed is one's own religion, though imperfect, than another's religion, though well-performed; by doing work imposed by nature, one attains not any stain". (BG XVIII.47)

सहजं कर्म कौन्तेय सदोषमपि न त्यजेत् ।
सर्वारम्भा हि दोषेण धूमेनाग्निरिवावृताः ॥१८.४८॥

"One's natural work, though with faults, should not be given up; indeed all enterprise is covered with faults as the fire is by smoke". (BG XVIII.48)

SELFLESS WORKING OF GOD AND NATURE

यज्ञशिष्टाशिनः सन्तो मुच्यन्ते सर्वकिल्बिषैः ।
भुञ्जते ते त्वघं पापा ये पचन्त्यात्मकारणात् ॥३.१३॥

"Good men who eat the remnants of the sacrifice are freed from all guilt; they, who cook for their own sake, are sinners and eat sin". (BG III.13)

नैव तस्य कृतेनार्थो नाकृतेनेह कश्चन ।
न चास्य सर्वभूतेषु कश्चिदर्थव्यपाश्रयः ॥३.१८॥

"He who, in this world, helps not to turn the wheel thus set in action, O Pārtha, is evil in nature and lives in vain satisfying his senses". (BG III.18)

यस्त्वात्मरतिरेव स्यादात्मतृप्तश्च मानवः ।
आत्मन्येव च संतुष्टस्तस्य कार्यं न विद्यते ॥३.१७॥

"The man who is delighted in Self only, and satisfied with Self; he who is contented with Self, no work exists for him (i.e. he need not do any work)". (BG III.17)

तस्मादसक्तः सततं कार्यं कर्म समाचर ।
असक्तो ह्याचरन्कर्म परमाप्नोति पुरुषः ॥३.१९॥

"For that reason, perform the work that must be done always without attachment; if a man performs work free from attachment he attains to the Highest". (BG III.19)

यद्यदाचरति श्रेष्ठस्तत्तदेवेतरो जनः ।
स यत्प्रमाणं कुरुते लोकस्तदनुवर्तते ॥३.२१॥

"Whatever is done by the best of men, other men too do it; the world follows that which he makes as his standard". (BG III.21)

न मे पार्थास्ति कर्तव्यं त्रिषु लोकेषु किञ्चन ।
नानवाप्तमवाप्तव्यं वर्त एव च कर्मणि ॥३.२२॥

"In all the three worlds there is no work that I

must do; nor is there anything unobtained that I should obtain, still I abide by work". (BG III.22)

CAUSES OF DESTRUCTION OF NATURE

द्वौ भूतसर्गौ लोकेऽस्मिन्दैव आसुर एव च ।
दैवो विस्तरशः प्रोक्त आसुरं पार्थ मे शृणु ॥१६.६ ॥

"In this world are two orders of created beings — The Divine and the Devilish; the divine is described in details; listen from me, O Pārtha! the devilish". (BG XVI.6)

प्रवृत्तिं च निवृत्तिं च जना न विदुरासुराः ।
न शौचं नापि चाचारो न सत्यं तेषु विद्यते ॥१६.७ ॥

"The devilish people know not action or inaction; neither purity nor even good manners, nor truth is found in them". (BG XVI.7)

असत्यमप्रतिष्ठं ते जगदाहुरनीश्वरम् ।
अपरस्परसंभूतं किमन्यत्कामहैतुकम् ॥१६.८ ॥

"They say that the world is without truth, without basis, and without a God, born of mutual union, caused by lust, and nothing else". (BG XVI.8)

एतां दृष्टिमवष्टभ्य नष्टात्मानोऽल्पबुद्धयः ।
प्रभवन्त्युग्रकर्माणः क्षयाय जगतोऽहिताः ॥१६.९ ॥

"These ruined souls, being fixed in this view, small in intellect, come forth with cruel deeds for destroying the world as enemies". (BG XVI.9)

आशापाशशतैर्बद्धाः कामक्रोधपरायणाः ।
ईहन्ते कामभोगार्थमन्यायेनार्थसंचयान् ॥१६.१२ ॥

"Bound by hundreds of bonds of hope, possessed of desire and wrath, they seek to gather wealth by unjust means for indulgence of desires". (BG XVI.12)

अनेकचित्तविभ्रान्ता मोहजालसमावृताः ।
प्रसक्ताः कामभोगेषु पतन्ति नरकेऽशुचौ ॥१६.१६ ॥

"Upset by many thoughts, covered by meshes of delusion, addicted to indulgence of desires, they fall into foul hell". (BG XVI.16)

तानहं द्विषतः क्रूरान्संसारेषु नराधमान् ।
क्षिपाम्यजस्रमशुभानासुरीष्वेव योनिषु ॥१६.१९ ॥

"These cruel ones hating me, lowest of mankind in the world, I hurl constantly these evil doers into the devilish wombs". (BG XVI.19)

मोघाशा मोघकर्माणो मोघज्ञाना विचेतसः ।
राक्षसीमासुरीं चैव प्रकृतिं मोहिनीं श्रिताः ॥१७.१२ ॥

"Vain in hope, vain in action, vain in knowledge and devoid of sense are they and also participate in the delusive nature of monsters and devils". (BG IX.12)

THE ORIGIN OF SIN

काम एष क्रोध एष रजोगुणमूढवः ।
महाशनो महापाप्मा विद्ध्येनमिह वैरिणम् ॥३.३७ ॥

"Desire it is, wrath it is, born of the strand of passion-greatly devouring, greatly sinning; know

it to be enemy here".

(BG III.37)

धूमेनाव्रियते वह्निर्यथाऽऽदर्शो मलेन च ।
यथोल्बेनावृतो गर्भस्तथा तेनेदमावृतम् ॥३.३८ ॥

"As the fire is covered by smoke and as a mirror by dirt, as an embryo is covered by womb, so is this (wisdom) covered by that (passion)". (BG III.38)

आवृतं ज्ञानमेतेन ज्ञानिनो नित्यवैरिणा ।
कामरूपेण कौन्तेय दुष्पूरेणानलेन च ॥३.३९ ॥

"O Kaunteya (Arjuna)! in the form of insatiable fire of desire, knowledge is covered by this and is the perpetual foe of the wise". (BG III.39)

उद्धरेदात्मनाऽऽत्मानं नात्मानमवसादसेत् ।
आत्मैव ह्यात्मनो बन्धुरात्मैव रिपुरात्मनः ॥६.५ ॥

"Let him raise himself by himself and not allow the self to sink; for self alone is self's friend and self alone is enemy of self". (BG VI.5)

असंयतात्मना योगो दुष्प्राप इति मे मतिः ।
वश्यात्मना तु यतता शक्योऽवाप्तुमुपायतः ॥६.३६ ॥

"Control is hard to win by one who is not self-controlled, so I think; but the self-controlled is able to win by striving through proper channel". (BG VI.36)

ERADICATION OF DEVILISH NATURE AND SIN

इन्द्रियाणि मनो बुद्धिरस्याधिष्ठानमुच्यते ।
एतैर्विमोहयत्येष ज्ञानमावृत्य देहिनम् ॥३.४० ॥

"It is said (that) the senses, the mind and intelligence are its seat; it obscures knowledge by these and covers the embodied Soul". (BG III.40)

तस्मात्त्वमिन्द्रियाण्यादौ नियम्य भरतर्षभ ।
पाप्मानं प्रजहि ह्येनं ज्ञानविज्ञाननाशनम् ॥३.४१॥

"Therefore, controlling the senses at the outset, destroy this thing of sin which destroys both knowledge and discrimination". (BG III.41)

इन्द्रियाणि पराण्याहुरिन्द्रियेभ्यः परं मनः ।
मनसस्तु परा बुद्धिर्यो बुद्धेः परतस्तु सः ॥३.४२॥

"They say that senses are high; mind is higher than the senses, intelligence is higher than the mind, higher than intelligence is He". (BG III.42)

एवं बुद्धेः परं बुद्ध्वा संस्तभ्यात्मानमात्मना ।
जहि शत्रुं महाबाहो कामरूपं दुरासदम् ॥३.४३॥

"Thus knowing Him higher than intelligence, steadying self by self, O thou of strong arms, destroy this enemy in the form of desire, so hard to reach". (BG III.43)

CONSERVATION OF NATURE : THE SOLUTION

अफलाकाङ्क्षिभिर्यज्ञो विधिदृष्टो य इज्यते ।
यष्टव्यमेवेति मनः समाधाय स सात्त्विकः ॥१७.११॥

"Sacrifice which is performed by those who desire no fruit, and as prescribed by laws, doing sacrifice as their

duty, fixing their mind on this, is that of good".
(BG XVII.11)

अभिसंधाय तु फलं दम्भार्थमपि चैव यत् ।
इज्यते भरतश्रेष्ठ तं यज्ञं विद्धि राजसम् ॥१७.१२ ॥

"But keeping in view the fruit (of action), and also for the sake of ostentation, who sacrifices, O best of Bharata! know that sacrifice to be of Energy". (BG XVII.12)

विधिहीनमसृष्टान्नं मन्त्रहीनमदक्षिणम् ।
श्रद्धाविरहितं यज्ञं तामसं परिचक्षते ॥१७.१३ ॥

"The sacrifice done with no rule observed, no food distributed, without hymns, without paying (sacrificial) fee, and devoid of faith, they declare that to be of darkness". (BG XVII.13)

श्रद्धया परया तप्तं तपस्तत्रिविधं नरैः ।
अफलाकाङ्क्षभिर्युक्तैः सात्त्विकं परिचक्षते ॥१७.१७ ॥

"That austerity practised by men with supreme faith by threefold (includes : harmlessness; gentleness; self restraint) by those who desire not fruit (of action) and are controlled, is designated as of good".
(BG XVII.17)

GOD : THE LAST RESORT

अजोऽपि सन्नव्ययात्मा भूतानामीश्वरोऽपि सन् ।
प्रकृतिं स्वामधिष्ठाय संभवाम्यात्ममायया ॥४.६ ॥

"Though immutable in nature and unborn, though I am the Lord of beings, I establish my Self in

Nature (which is mine) and come into being by my own illusive power". (BG IV.6)

यदा यदा हि धर्मस्य ग्लानिर्भवति भारत ।
अभ्युत्थानमधर्मस्य तदात्मानं सृजाम्यहम् ॥४.७ ॥

"Whenever there is decline of righteousness, O Bharata ! and ascendance of unrighteousness, then I create myself". (BG IV.7)

परित्राणाय साधूनां विनाशाय च दुष्कृताम् ।
धर्मसंस्थापनार्थाय संभवामि युगे युगे ॥४.८ ॥

"For the deliverance of the good and the destruction of the wicked and for establishing righteousness I come into being age after age". (BG IV.8)

जन्म कर्म च मे दिव्यमेवं यो वेत्ति तत्त्वतः ।
त्यक्त्वा देहं पुनर्जन्म नैति मामेति सोऽर्जुन ॥४.९ ॥

"He who knows my divine birth and works in true Nature, on leaving body, he does not go to rebirth, he comes to me, O Arjuna!" (BG IV.9)

BHAGAVAD GITA ON SUCCESSION OF LIFE

Life in nature is a continuous process of flux and change. It is an unending process. Further, it is observed in nature that one form acts as a source for the formation of another form. The Lord Sri Krishna, in Bhagavad Gita has discussed about the continuity of life, the inter-relationship between different living beings and has also explained how one form acts as a source of another form.

अहं सर्वस्य प्रभवो मत्तः सर्वं प्रवर्तते ।
इति मत्त्वा भजन्ते मां बुधा भावसमन्विताः ॥१०.८॥

"I am the source of all creation and every thing in the world moves because of me". (BG X.8)

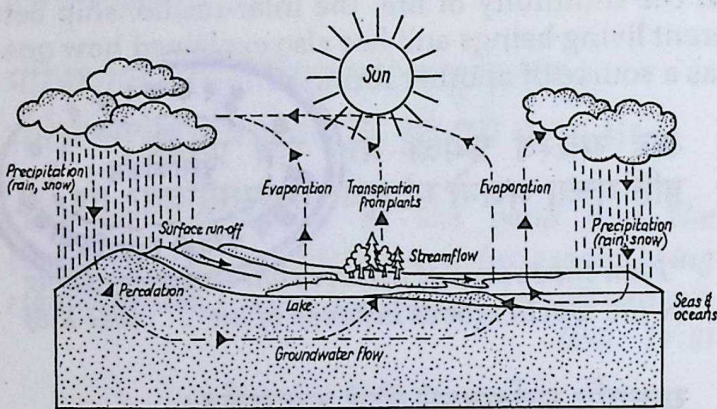
यच्चापि सर्वभूतानां बीजं तदहमर्जुन ।
न तदस्ति विना यत्स्यान्मया भूतं चराचरम् ॥१०.३९॥

"All creatures are pervaded by me and there is no creature, whatsoever, which is devoid of my presence". (BG X.39)

The Lord Sri Krishna states that He is the source of all creations; both animate and inanimate originate from him (BG X-8). For the source of creation He says "Know Me the Eternal seed of all living beings". (BG VII-7)

The constant source for the formation of one form into another is defined as the 'eternal seed'. For example, the ocean is the eternal seed of the cloud, that appears and disappears. The water cycle is an interesting example.

The amount of water on earth always remains the same. As the figure shows that the water moves from the air to the earth and back to the air again. This is called water cycle. Water in the air forms the clouds, and falls to earth as rain or snow. On the earth water sinks into the soil or flows over-land or streams, rivers and oceans. The sun makes the water evaporate from the earth back into the air. Thus it is observed that one form is the source of another form.



The Water Cycle

The Lord having manifested itself in living beings, is the source of all successive forms. Further, He being eternal, the varieties of beings come into existence, from time to time. This process is inevitable and endless. In nature this mechanism is evident in the form of evolutionary tree and through the phenomenon of succession.

In evolution it is observed that amphibians, have evolved from fish and the former has acted as a seed for the evolution of reptiles. The reptiles have been the source of aves and mammals. The mechanism of succession is going in nature at every moment. It can be understood in a very

simple way. For example, In nature, numerous communities of plants and animals are present. The communities arise, grow, mature, attain old age and die due to natural or some accidental causes. New forms are developed replacing the old ones. This process is called succession. It is interesting to note that succession is going on at every moment.

The process of succession beginning in pond or lake to forests or tree stage is an interesting example, where each form acts as a eternal seed. The various stages and processes of a climax or last community is explained hereunder :

Submerged stage : It is a area, where the water is more than 20 feet. Here there are many submerged plants. These plants grow at various depths. When the plants die, their remains sink to the bottom. Where they form a mass of humus which *bonds* the muddy soil. This continously filling process makes the water shallow and it is here the new forms are formed.

Floating State : The water is still and has many floating plants. Like the former they also die and its humus increases. This filling leads to the formation of marshy and swampy

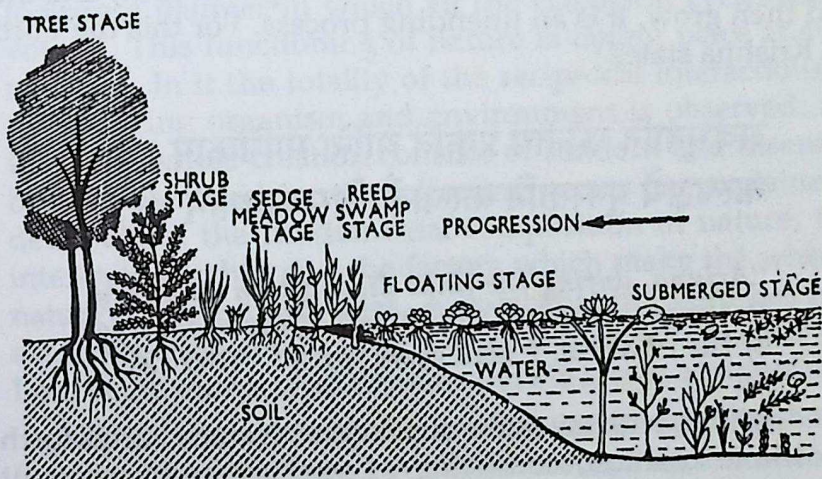


Diagram showing plant succession in a pond

areas. Further, filling of these areas lead to the woodland stage, where the shrubs and trees are grown.

Thus it is observed that in a particular area the life which started from deep water gradually changed into a forest. This happens after passing through various stages which include-submerged, floating, marsh, swamp and the woodland. Therefore, one form acts as a source of another form. In other words each form acts as a eternal seed for the other. Their inter-relationship is like clusters of yarn beads. Where the beads can be designated as living beings and the yarn as the connecting link (succession).

मत्त परतरं नान्यत्किञ्चिदस्ति धनंजय ।
मयि सर्वमिदं प्रोतं सूत्रे मणिगणा इव ॥७.७ ॥

"Arjuna, know me that all beings have evolved from me and like clusters of yarn beads are formed by knots on a thread, all are threaded on me".
(BG VII.7)

In the succession it is observed that plants grow and die and then grow, it is an unending process. For this the Lord Sri Krishna states :

सर्वभूतानि कौन्तय प्रकृतिं यान्ति मामिकाम् ।
कल्पक्षये पुनस्तानि कल्पादौ विसृजाम्यहम् ॥९.७ ॥

"Arjuna, during the final dissolution enter my Prakriti (the prime cause) and at the beginning of the creation, I send them forth". (BG IX.7)

"Arjuna, with me as the supervisor, Nature brings forth the whole creation, consisting of sentient and insentient beings, it is due to this cause that the whole wheel of nature goes round".

BHAGAVADGITA ON THE RELATIONSHIP BETWEEN ABIOTIC AND BIOTIC FACTORS

"Arjuna, know me as the Supervisor. Nature brings forth the whole creation, consisting of both sentient and insentient beings, it is due to this cause that the wheel of Nature is going round."
(BG IX.10)

मयाध्यक्षेण प्रकृतिः सूयते सचराचरम् ।
हेतुनानेन कौन्तेय जगद्विपरिवर्तते ॥९.१० ॥

God is the source of origin of nature, and having created it, He has also taken the reign of its functioning, therefore, he has called himself as the Supervisor. He says that there is a relationship between the living and non-living. It is observed that the nature under His supervision functions in a foolproof manner in which all the ecological cycles are involved. This functioning of nature is taking place at every moment. In it the totality of the reciprocal interactions between living organism and environment is observed. Further, the whole creation consists of sentient and insentient beings. The Lord in the following verses has explained in detail about the fundamental composition of nature, their inter-relationship and the factors which make the wheel of nature moving at all times. A point that the Lord has made evidently clear in Gita in this verse and elsewhere, that "The Lord is the source of all creation and He acts as a supervisor."

This statement requires a basic understanding that the Lord having manifested in all forms acts a source of formation of the other forms. Further, all the forms having been created act as a medium for formation of other forms.

"Wielding My Nature, I release, again and again, (according to respective genetic forms), all these multitude of beings subject to the influence of their own nature". (BG IX.8)

प्रकृतिं स्वामवष्टम्य विसृजामि पुनः पुनः ।

भूतग्राममिमं कृत्स्नमवशं प्रकृतेर्वशात् ॥९.८ ॥

All this takes place under the supervision of the Lord. The Lord has unfolded this statement in the following verses.

"Earth, water, fire, air, ether, mind, reason and also ego.; these constitute my nature; eightfold divided. This indeed is my lower (material) nature; the other than this, by which the whole universe is sustained, know it to be My higher (or spiritual) nature in the form of Jiva (the life-principle), O Arjuna." (BG-VII.4-5)

भूमिरापोऽनलो वायुः स्वं मनो बुद्धिरेव च ।

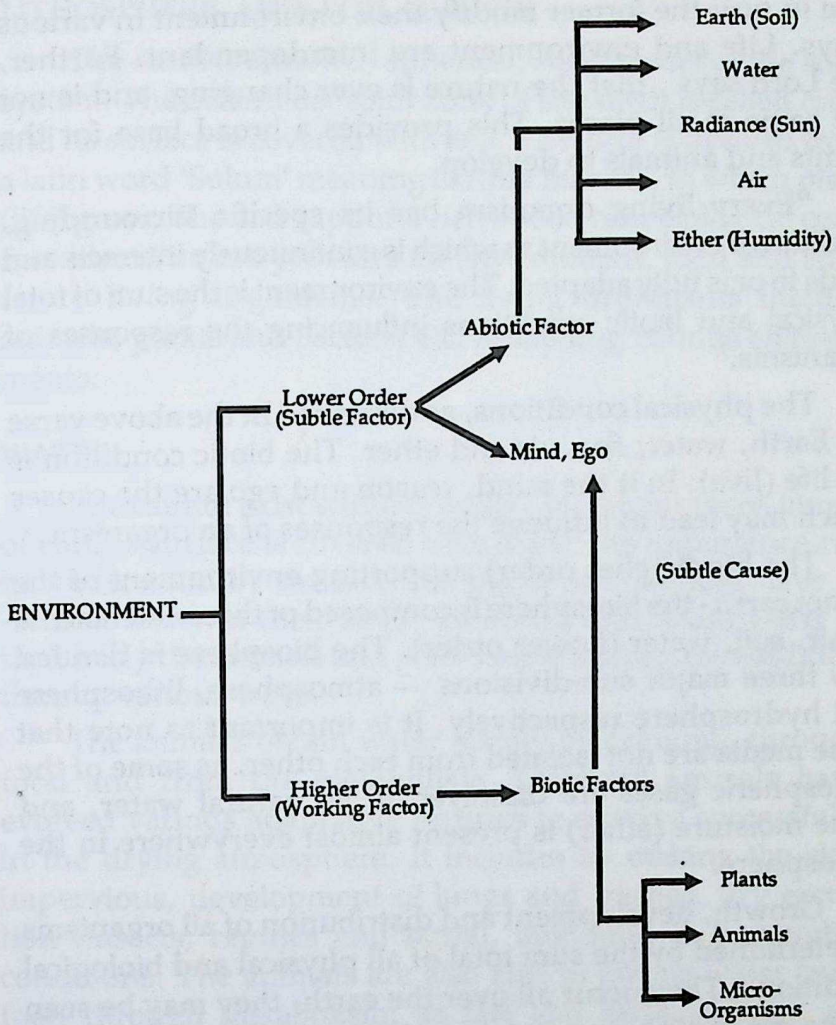
अहंकार इतीयं मे भिन्ना प्रकृतिरष्टधा ॥७.४ ॥

The verses VII-4 and 5 have been divided into lower and higher orders :

The lower order can further be divided into two parts:

- (a) Earth, water, fire (temperature/energy), air, ether
- (b) Mind, intellect and ego

In these verses the basic composition of nature /environment and the organisms have been enumerated. In it, there lies the phenomenon of their inter-relationship between the living and non- living beings. As regards to the relationship between the living being and nature, it is observed that the plant and animal life is affected by the various factors of the environment



Relationship between Abiotic and Biotic Factors,
(Note: Mind and Ego are the subtle causes to activate the living beings) [BG VII 4/5]

and in turn the former modify their environment in various ways. Life and environment are interdependant. Further, the Lord says, that the nature is ever changing, and is not the same at all places. This provides a broad base for the plants and animals to develop.

"Every living organism has its specific surrounding, medium or environment to which is continuously interacts and tends to or is fully adapted. The environment is the sum of total physical and biotic conditions influencing the responses of organisms."

The physical conditions, as described in the above verse are Earth, water, fire, air and ether. The biotic condition is the life (Jiva). In it the mind, reason and ego are the causes which may lead to influence the responses of an organism.

The life (Higher order) supporting environment of the planet earth - the bio-sphere is composed of three chief media — air, soil, water (Lower order). The biosphere is divided into three major sub-divisions — atmosphere, lithosphere and hydrosphere respectively. It is important to note that these media are not isolated from each other, as some of the atmospheric gases are dissolved in all natural water, and some moisture (ether) is present almost everywhere in the atmosphere.

Growth, development and distribution of all organisms is determined by the sum total of all physical and biological conditions. They occur all over the earth, they may be seen on the top of high mountains, on banks of rivers, streams or deserts. The animals are seen in deep sea, where the light cannot even reach. However, a closer study reveals that there is no uniformity in the distribution of life due to variations in the environment. A given place has its own flora and fauna. The following are the examples of distribution of living beings in varied environment.

LITHOSPHERE AND SOIL (EARTH)

The earth is a cooled, spherical, solid planet of the solar system. The outermost solid zone of the earth is called crust and its surface is covered with soil. The 'soil' is derived from a latin word 'Solum' meaning earthly material in which plant (life) grow. The soil supports rich and varied biological communities. The soil provides an environment, food and shelter to living organisms. The living organisms include animals, plants and bacteria etc. inhabiting various environments.

WATER

Life cannot exist without water, and about three-fourth of earth's surface is covered with water. Its importance can be understood by the fact that plants and animals have 70-90% of water in their body. To obtain and retain water in their body the animals and plants have undergone modifications in various ways.

The animals obtain water mainly by drinking, through food and from the metabolism. Different animals have evolved various adaptative features to survive successfully in the drying atmosphere. It includes by making the skin impervious, development of lungs and trachea, dry excretion (insects, reptiles and birds), migration to favourable conditions. The animals are also able to extract water from food through metabolism, as fats and carbohydrates are broken and water is also produced by the oxidation of hydrogen or carbon in the body.

LIGHT AND RADIATION

The radiant energy from the Sun is the basic requirement for the existence of living beings on earth. This source of energy is of fundamental importance to the photosynthetic production of food by plants. Further, it has been observed that light influences plants and animals directly or

indirectly. In plants, the light influences the structure, form, shape, physiology, growth, reproduction, development, local distribution etc. The following are some of the examples:

(A) Direct effect of light on plants

Light affects directly in the following aspects of plant life. The important ones are:

- (i) It is essential in the formation of chlorophyll pigment in chlorophyllous (green) plants. It has strong influence on number and position of chloroplasts.
- (ii) Light has a significant role in photosynthesis.
- (iii) Light inhibits the production of growth hormones (auxines) as a result of which it influences, the shape and size of plants. Plants growing in insufficient light or in total darkness produce maximum amount of growth hormones, as a result of which they are elongated with weak pale stems with very few branches.
- (iv) High intensity light results in the production of anthocyanin pigments resulting to beautiful coloured flowers.
- (v) The development of flowers, fruits, seeds are greatly affected by light intensity.
- (vi) In nature, it is observed that the duration of length of day (photoperiod) plays a significant role in the growth and flowering of wide variety of plants. According to the response of duration of day length (photoperiod), the plants have been classified into the following groups:
 - (a) Long day plants - When the light duration is more than 12 hours per day e.g. radish, potato, spinach, etc.
 - (b) Short day plants - The duration of light is less than 12 hours per day e.g. cereals, tobacco, etc.

- (c) Day neutral plants - They show little response to the length of the day e.g. tomato plant.
- (vii) Light is an important factor in the distribution of plants. Some plants grow in full sunlight while others prefer to grow in shades.

(B) Effects of light on animals

The light has a great influence on the physiology and behaviour of the animals. The following are some important effects:

- (i) **Metabolism:** The metabolic rate of different animals is greatly influenced by light, for example, the cave dwelling animals are found to be sluggish in their habit and have slow metabolic rate e.g. Proteus.
- (ii) **Pigmentation:** The pigmentation in animals is greatly influenced by the light. The darkly pigmented skins of human inhabitants of tropic is significantly evident. This is due to the fact that skin pigment synthesis is dependant on sunlight. The light also determines the characteristic pattern of pigment of different animals which serve the animals in sexual dimorphism and protective colouration e.g. Chameleon.
- (iii) **Animal movements:** The influence of light on the movement of animals is greatly evident in especially lower animals. It is observed that some animals are active during night (cockroach) while some during day (Man, Horse, Butterfly).
- (iv) **Reproduction:** In birds it is observed that light is necessary for the activation of gonads and in initiating animal breeding activities.

Atmosphere and Air

The earth is surrounded by numerous layers of gases.

The atmosphere remains in contact with all the major types of environment of earth, interacting with them and also influence their ability to support life. It also filters sunlight reaching the earth and thus it also affects the climate. Further, the atmosphere is a reservoir of several elements essential for life.

Gaseous Component

Air is a mixture of gases which include nitrogen, oxygen, argon, carbon dioxide and other gases. However, the composition is relatively constant. The air is used by most organisms in respiration to liberate energy from food during oxidation. Few micro-organisms, plants and animals are observed in air. The common examples are insects, birds.

As for the continuity of life and the inter-relationship between different factors, the Lord has enumerated in following integrated manner:

अजोऽपि सन्नव्ययात्मा भूतानामीश्वरीऽपि सन् ।
प्रकृतिं स्वामधिष्ठय संभवाम्यात्ममायया ॥४.६॥

"Though birthless and deathless and Lord of all beings, I manifest Myself through my own a Yogamāyā (Divine potency) keeping my nature (Prakriti under control)". (BG IV.6)

All these factors indicate the living beings live in varied environment. The reason of different living beings present in varied environments Gita states, is "mind, reason and ego" (BG VII - 4/5). Further, the Lord has placed the abiotic factors (earth, air, fire etc.) alongwith these in the lower orders; though the former are characteristics of living beings. The purpose of this placement is due to the fact that:

A living being pervades in different environmental condition and in a specific environment different animals live, as has

been observed earlier in this text. It is for this purpose, mind and reason have been placed with the abiotic factors. Mind, reason and ego are linked with senses as it is the senses which activate them, as the former analyses a given situation with the help of senses. The application of these parameters with the body by a living being has been enumerated by the Lord by the following verse.

न तद्भासयते सूर्यो न शशाङ्को न पावकः ।
यद्गत्वा न निवर्तन्ते तद्धाम परमं मम ॥१५.६ ॥

"It is while dwelling in senses of hearing, sight, touch, taste and smell, as well as mind that this Jivātmā enjoys the objects of senses." (BG 15.6)

ममैवांशो जीवलेके जीवभूतः सनातनः ।
मनः षष्ठीन्द्रियाणि प्रकृतिस्थानि कर्षति ॥१५.७ ॥

"The eternal; Jivātmā in this body is a particle of my being and it is that alone which draws round itself the mind and the five senses, which rest in prakriti." (BG 15.7)

In an animal the five senses are hearing, sight, touch, taste and smell. These are termed as the senses of perception so as to attain knowledge about the environment and to interact with the sense of action (hand, foot, mouth etc). It is , therefore, the Lord has placed a living being in the higher order, as it is a conscious matter and it sustains the nature by its variation and distribution. All these facts suggest that a living being is a knower and a non-living knowable. It is due to interaction of the two that the wheel of nature is going round.

THE UNIVERSAL TRUTH

Truth in all its essence is universal and hence God is one. Over the ages with time, divinely gifted men have been able to perceive God in His innumerable facets through their respective perceptions. Based on these experiences, they defined a set of norms and ethics, suitable and appropriate to their times so as to enable mankind to achieve God realization.

The ultimate aim of man is to attain the Vision of God which may lead to everlasting happiness, bliss and peace. The central precept of God being within one's ownself as the reservoir of one's soul or spirit.

People following a particular adept or a set of teachings formed communities which eventually became identified as a particular religion. All religions promote love, simplicity, brotherhood, tolerance, non-violence etc. for a vision of God Almighty and to be in unison with him. God is visualized as Light in various religions. This is evident in Islam, Sikhism, Hinduism, Buddhism, etc. It is the enlightened only who is able to perceive this light to whatever religion or faith he may belong.

The above is highlighted best by nature itself in its physical phenomenon of dispersion. The sunlight on a rainy day disperses through water droplets to form a beautiful rainbow consisting of seven colours perceived by the human eye. The same happens when a beam of white light is subjected to pass through a prism. The beam is dispersed into its constituents and emerges at the other interface in the form of different colours which vary in their wavelengths and hence are deviated from the initial direction by different amounts.

Thus, across the border of time and space God or the ultimate

reality was perceived in different manners and the path to trace back to our origin, our essence, was slightly different. When one looks at the entire spectrum in its totality that is by rotating a disc with all the seven colours, one experiences one light. This is the essence of one God and various religions. This is the "Universal Truth".

The need of the hour is, therefore, to identify the Universality of Religion in order to experience Truth, Enlightenment and vision of God.

यो यो यां यां तनुं भक्तः श्रद्धयार्चितुमिच्छति ।
तस्य तस्याचलां श्रद्धां तामेव विदधाम्यहम् ॥७.२१ ॥

"Whatever celestial form a devotee chooses to worship with reverence, I stabilize the faith of that particular devotee in that form". (BG VII.21)

In the world there is a diversity of both of the devotees and the deities. The devotees worship according to their faith, desire and temperament. They have an unmitigated faith in the divine presence of the God. In their glory, the devotee follows the method of worship as prescribed by their respective faiths. Further, the worshipper has a particular image of this deity in his mental frame of mind. He, at times, installs the image as felt by him. He may also obtain or make a painting/picture which conforms his mental frame of the deity.

The Lord here emphasises that equipped with the faith stabilized by Him, the devotee worships the deity of his choice according to the rules laid down in the scriptures, and as a reward for his worship obtains from the deity only such of his coveted enjoyments as has been preordained by the Lord.

ये यथा मां प्रपद्यन्ते तांस्तथैव भजाम्यहम् ।
मम वर्तमानुवर्तन्ते मनुष्याः पार्थ सर्वशः ॥४.११ ॥

*"Arjuna, howsoever, men seek Me; even so do I
approach them; for all men follow my path in
every way".* (BG IV.11)

Thus, the Lord recognizes the need of these divergent paths, understands the urge of various types of devotees and graciously oblige them to attain perfection.

BHAGAVADGITA ON THE GENESIS OF BIOETHICS

The Chennai Statement on Bioethics in one of the recommendations states "A comparative study of religions with special reference to values is basic to developing ethics at the grassroot level and when this can grow steadily, shall help in eliminating unethical acts of human beings. "Bhagavadgita identifies not only the virtues of an ethical person but also puts forward the solution for the genesis of bioethics in mankind". He who is free from malice towards all beings, friendly and compassionate, rid of 'I' and 'Mine', balanced in joy and sorrow, forgiving in nature, ever contented and mentally united with Me, nay, who has subdued his mind, senses and reason to Me, that devotee of Mine is dear to Me' (BG XII-13 & 14). Further, it states that one should not be a source of annoyance to his fellow creatures (BG XII-15). Careerists cultivate friendship with all, with the base motive of self advancement but an enlightened is he who has nothing to seek but everything to give. He is so compassionate that he ever promotes the welfare of others. BG exhorts that life and actions of unethical persons should be brought to take a positive turn and mere avoidance of hatred is not sufficient. A man has two subtle factors in him - mind and intellect. The mind feels and the intellect analyses to decide the mode of action. The mind verily is where the mind is. It can make hell or heaven on earth. For attaining ethical state BG states, "Mind oscillates between noble and base deeds. Through constant practice mind can be reclaimed from baseness. The impossible can be made possible through constant practice. Nature can be changed by nurture. It is the most effective means" (BG XII-8 & 9).

मय्येव मन आधत्स्व मयि बुद्धिं निवेशय ।
निवसिष्यसि मय्येव अत ऊर्ध्वं न संशयः ॥१२.८॥

अथ चित्तं समाधातुं न शक्नोषि मयि स्थिरम् ।
अभ्यासयोगेन ततो मामिच्छाप्तुं धनंजय ॥१२.९॥

अद्वेष्टा सर्वभूतानां मैत्रः करुण एव च ।
निर्ममो निरहंकारः समदुःखसुखः क्षमी ॥१२.१३॥

संतुष्टः सततं योगी यतात्मा दृढनिश्चयः ।
मय्यर्पितमनोवृद्धिर्यो मद्भक्तः स मे प्रियः ॥१२.१४॥

यस्मान्नोद्विजते लोको लोकान्नोद्विजते च यः ।
हर्षामर्षभयोद्वेगैर्मुक्तो यः च मे प्रियः ॥१२.१५॥

- * Characters of an Ethical Person
- * The feeling of oneself as alien to other is born of ignorance.
- * Aggressive form of this feeling is hatred and is capable of creating in the system.
- * The destructive feeling has no place in the wholesome life of a ethical person.
- * Mere avoidance of hatred is not sufficient.
- * Life and actions of unethical persons should be brought to take a positive turn.
- * Feeling oneself friendly to all is the mark of an ethical person.
- * Careerist cultivates friendship with all, with the base motive of self advancement. But an enlightened is he who has nothing to seek but everything to give. He is so compassionate that he ever promotes the welfare of others.
- * When the world happens to speak highly of his exemplary life and work, he derives no pleasure from that

praise. He is even minded in the midst of these occurrences. His refined feelings and his clarified understanding are directed towards his noble deeds.

* A man is born with two tendencies.

Dormant State

Noble: Divine Frame, Ethically Oriented, Enlightened

Base: Earth Bound, Unethical, Demonic

Expression of Positive : Weight of Ethical Love for Nature

Condition : Mode : Mankind is
Divine Nature

Expression of Negative : Weight of Unethical Selfish, Greed,

Condition : Mode Demoniac
Nature

Man has subtle factors in him : Mind and Intellect

Mind feels - Intellect analyses and decides the mode of action.

Mind verily is where his mind is.

It can make heaven or hell on earth.

Combination of mind and intellect in man can be a boon for all living beings.

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